

STATE OF CALIFORNIA

STATE WATER RESOURCES CONTROL BOARD

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PUBLIC HEARING
REGARDING WATER RIGHT APPLICATIONS FOR THE
DELTA WETLANDS PROJECT
PROPOSED BY DELTA WETLANDS PROPERTIES
FOR WATER STORAGE ON WEBB TRACT, BACON ISLAND,
BOULDIN ISLAND, AND HOLLAND TRACT
IN CONTRA COSTA AND SAN JOAQUIN COUNTIES

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HELD AT

901 P STREET
SACRAMENTO, CALIFORNIA
WEDNESDAY, JULY 23, 1997
9:00 A.M.

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Reported by:

MARY GALLAGHER, CSR #10749

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EAST BAY MUNICIPAL UTILITY DISTRICT

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DEPARTMENT OF THE U.S. DEPARTMENT OF THE INTERIOR

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WEDNESDAY, JULY 23, 1997, 9:00 A.M.

SACRAMENTO, CALIFORNIA

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HEARING OFFICER STUBCHAER: Good morning. We'll reconvene the Delta Wetlands water rights hearing. We'll have the direct testimony of Contra Costa Water District to begin. Mr. Maddow.

MR. MADDOW: Thank you, Mr. Stubchaer. Mr. Brown, good morning. I have just a couple of brief opening remarks and then we'll proceed directly into our case. We anticipate it will take about an hour.

I'm Robert Maddow. I'm the attorney for the Contra Costa Water District. The Water District has been present throughout the hearing. And as you now the IMOU's are, perhaps, the closest proximity to the Wetlands's Projects. And that is, I think, reflected through some of the things that we've been inquiring into and we'll be hearing a great deal about that in our direct testimony.

The Water District is very concerned about water rights issues, avoidance of injury to the water rights that are the basis for its water supply. And we'll be seeking protective terms and conditions in that regard in any permit that the Board might issue. Dr. Gartrell, Dr. Greg Gartrell will be addressing those issues.

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1 We noted that in this proceeding it's been
2 asserted in an opening statement to the Board that
3 Decision 1629 concerning the water rights for the
4 District's Los Vasqueros Project did not incorporate
5 certain limits related to the X2 line in the water rights
6 related to Los Vasqueros. And we just wanted to make an
7 assertion by way of my opening that we think that's
8 patently wrong on the law and the facts. And I think the
9 permit terms are vague and ambiguous. And we think the
10 assertions that have been made by the Applicant in that
11 regard were simply incorrect. And we urge the Board to
12 adopt similarly strict and protective terms in any permit
13 that might be issued to this Applicant.

14 And, again, Mr. Gartrell -- Dr. Gartrell will be
15 talking about that in his direct testimony. We obviously
16 are concerned about water quality, TOC and salinity
17 issues, which we've been focusing on throughout and we'll
18 address further today. Our principle witness in that
19 regard will be Dr. Richard Denton. And we're going to
20 show, we believe, how Delta Wetlands's diversions and
21 discharges could degrade the quality of water -- of Delta
22 water at times when CCWD anticipates its operations under
23 senior rights. And we think that there are problems with
24 the studies you've seen so far. And that -- and with the
25 standard for determining significance criteria and

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1 we'll be, again, addressing those issues through the
2 testimony of Dr. Gartrell and Dr. Denton.

3 We also have concerns from I guess I would call
4 it a water policy perspective about the Delta Wetlands
5 Project and where it sits in regard to Delta issues more
6 broadly. And that will be addressed both in the
7 testimony of Dr. Gartrell and in the first statement that
8 you will hear from us that will be from the District
9 General Manager, Mr. Walter J Bishop.

10 Back in April when we filed the notice of intent
11 to appear on behalf of the District, it was anticipated
12 that Mr. Bishop would appear as an expert and deliver
13 expert testimony. In fact, what was submitted in Mr.
14 Bishop's submittal was a policy statement. It's CCWD
15 Exhibit 2. Mr. Bishop is here and will make a policy
16 statement this morning. Then he will be followed by our
17 experts witnesses: Dr. Greg Gartrell and Dr. Richard
18 Denton. And then we have four other CCWD staff persons
19 who have either contributed to the preparation of
20 exhibits, or are among the District's most knowledgeable
21 people with regard to these issues. And those four
22 gentlemen: Dr. David Briggs, Mr. Gary Darling, Mr. Bill
23 Hasencamp, and Dr. K.T. Shum will all be available for
24 cross-examination.

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DIRECT TESTIMONY OF CONTRA COSTA WATER DISTRICT

BY ROBERT MADDOW

MR. MADDOW: And with that I'd like to introduce Walter J. Bishop, the District's General Manager. And just a couple preliminaries. Mr. Bishop, does CCWD Exhibit 1A accurately summarize your education and experience business?

MR. BISHOP: Yes.

MR. MADDOW: And could you just -- you're not being offered here as an expert witness, but could you give the Board just a brief summary of your professional experience that's relevant to the Board's consideration of this matter. And, again, this is in regard to your policy statement.

MR. BISHOP: Well, I've worked at a wastewater utility for over least 20 years. I think particularly on these issues before the Board, I followed one of your Board Members, Mary Jane Forester onto the National Drinking Water Advisory Council. And have served on that now while we go through the process of implementing the Safe Water Drinking Act.

And I also serve on both the AWWA and Water Environment Research Foundation in which research dollars are, by Board Member decision, where we see the national

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1 funds going with respect to both drinking water and water
2 pollution. The rest of my background in terms of
3 education and experience are in my resume, but I think
4 those are particular areas that I'm most proud of, but I
5 think a lot of the policy issues that I will raise today
6 to the Board Members stem from those.

7 MR. MADDOW: Mr. Bishop is CCWD Exhibit 2 your
8 policy statement, was that -- did you either prepare that
9 or was it prepared at your direction?

10 MR. BISHOP: Yes.

11 MR. MADDOW: And could you summarize your policy
12 statement?

13 MR. BISHOP: I'd like to, but I'd like to say good
14 morning.

15 HEARING OFFICER STUBCHAER: Good morning.

16 MR. BISHOP: The last time I recall standing here
17 during a water rights proceeding was for Los Vaqueros.
18 And shortly, I'm here to tell you, you'll be seeing
19 invitations to the dedication ceremony as we're well-over
20 90 percent done on that project and moving ahead. So I'm
21 happy to see you this morning, but also to let you know
22 that project is doing very well.

23 HEARING OFFICER STUBCHAER: There was a dedication
24 of the Coastal Grants and the California Aqueduct Friday.

25 MR. BISHOP: I saw that.

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1 HEARING OFFICER STUBCHAER: So it's the month of
2 dedications.

3 MR. BISHOP: Well, no, we wouldn't be a month. It
4 will be somewhere probably in the spring, but we're
5 seeing it come out of the ground very quickly.

6 HEARING OFFICER STUBCHAER: Okay.

7 MR. BISHOP: Thank you. What I'd like to talk to
8 you today and the policy issues that I would like to
9 raise stem from two perspectives. One is a water quality
10 type of perspective. And a lot of that has to deal with
11 National Drinking Water Council, WHARF involvement,
12 professional involvement. As I see national trends
13 moving and where we see regulations of water quality for
14 safe drinking watering urban agencies.

15 And the second just has to deal the context in
16 which this decision is being made, which I consider to be
17 an unprecedented period of time in California history.
18 And I'll talk about that a little bit, but there is a
19 statewide process, and I'm not just referring to CAL/FED,
20 there are other things with the Bay-Delta Accord and
21 others that put us in an unprecedented time for making
22 the type of determinations that the State Board has to
23 make right now with respect to harm to others, contact to
24 overall State water issues.

25 And I think both of those -- I have some policy

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1 implications that I'd like to at least lay before you. I
2 know we'll have testimony coming up later with respect to
3 our findings on TOC's and modeling and impacts. I will
4 probably touch a little bit about the direct impact on
5 CCWD, but I'd like to do that more in context of overall
6 urban water M&I users and national friends.

7 I've been on the National Drinking Water Council
8 a little over a year now, and it's a period of time where
9 the Safe Drinking Water Act is being implemented, the new
10 reauthorized safe drinking water. And when we look at
11 what we're doing, I also chaired work groups that you'll
12 see our first work product coming out in the Federal
13 Registrar in about August, about what are the contaminants
14 of concern that the EPA should regulate in the next five
15 years.

16 I can tell you that we voted on those the day
17 before yesterday. And what you will see on this list is
18 something surprising. You will see sodium on this list
19 as something that should be regulated nationally, because
20 it impacts on health to impacted populations. And those
21 impacted populations are probably on a percentage a lot
22 larger than we had thought in the past. So you'll see
23 something -- what you wouldn't see on this list is
24 bromate and TOC. And the reason they're not on the list
25 is because they're in the two-year regulation process

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1 not the five year.

2 So we're sitting here talking to you today, at
3 least I am, I'm seeing a trend coming through the Safe
4 Drinking Water Act and my involvement on the national
5 that says there is going to be heightened awareness in a
6 whole series of contaminates that we find naturally
7 occurring, or in the Bay Delta which are going to put a
8 host of issues before both CAL/FED and the State Board
9 never before brought to bear.

10 In keeping with that, the Drinking Water Council
11 passed a recommendation several months ago that asked EPA
12 to set as the higher priority the protection of drinking
13 water sources through watershed protection by
14 establishing a water quality criteria and objectives,
15 looking at contaminates that in the past have been
16 considered to be unregulated, because they're either
17 naturally occurring, or the result of diversions of water
18 or concentrations.

19 It's something that we're seeing. The Safe
20 Drinking Water Act as it got passed -- and I'm sure
21 you've been briefed by your staff, put 700 million
22 dollars in circulation for loans and grants. But what it
23 does is 10 percent of that is set aside for the states to
24 use on a new watershed source protection studies, and
25 allows set asides to be used. Congress said when they

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1 looked at this reliance on treatment and status quo is
2 not the basis of, if you will, harm to others. It is
3 where we need to go in the trend to meet higher quality
4 standards for both drinking water and source protection.

5 So when I talk to you, or the issues I want to
6 raise to you today about the policy, is when someone says
7 from a water quality standpoint, this is going to
8 maintain the status quo, may have overall averages that
9 looks somewhat better, may have monthly daily running
10 averages seven days that are worse, that is not
11 presenting a "no harm to others", or net benefit.

12 That is, in fact, in the trend we're going in, a
13 regression for a new project to come forward. At least
14 from my standpoint on a policy looking at it we are not
15 looking at CAL/FED. We're not looking at national
16 standards with respect to staying the same. We're
17 looking at improving the water quality for the
18 environment, for the habitat, and M&I. So I think that's
19 a burden, at least, that I'm looking for when someone is
20 coming forward with a project saying there's no
21 significant water quality impacts. They are de minis.

22 Nationally, what I also see is we're looking at
23 the actual National Drinking Water Standards itself. And
24 I'm sure in previous testimony it's been raised, but
25 Contra Costa Water District is 1 of 12 of the large urban

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1 water suppliers in California. CAL/FED asked us: What
2 are the M&I standards you want us to look at when we go
3 through the CAL/FED process?

4 We produced -- it's a CUWA report. Now, there
5 are two things significant about that. No report can
6 come out of CUWA without a unanimous vote by all 12
7 agencies. That means not much comes out of CUWA
8 sometimes. But on the other hand, that report was
9 unanimous in CUWA Board support in-Delta users, upstream
10 diverters, self-Delta exporters can say TOC and bromate
11 and bromide will not be met with existing Delta supply
12 given where the National standards are going.

13 Experts were brought in to advise us. We in
14 turn reviewed that, modified it because as you can
15 imagine many of us are very concerned about any kind of a
16 report that would dictate an isolated facility
17 predisposed. But we all agreed that is where it's going.
18 That TOC, bromide, bromate are really the issues of
19 concern. Now, Contra Costa Water District, largest urban
20 in-Delta diverter within the legal definition of the
21 Delta, largest CVP urban Delta, most of our service area.

22 And when we look at that we're not an agency
23 because of where our intake is located that says, well,
24 you know, it's what comes down the pike and we have to
25 fight everybody, because of what comes down the pike. We

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1 are an agency which over the last five years, will have
2 invested almost 700 million dollars, local dollars in a
3 new reservoir. All of our treatment plants will be at
4 ozone and chloramination. We are in the middle of our
5 last 30 million dollar ozonation upgrade. We have rates
6 that are double on an average -- monthly average bill for
7 State average for our urban users. Why? Because our
8 customers care heavy about the quality of the water
9 they're getting. And they're not just relying on the
10 Delta. They're trying to do what they can do.

11 On the other hand, they expect us to make sure
12 that the Delta is either improving, or getting better
13 with every decision that comes down, because we recognize
14 that we're doing our part, but at the same time we can't
15 have the carpet rolling up behind us, because with our
16 particular look at this, if the bromate and the bromide
17 issues and the TOC issues aren't made better -- and they
18 can be made better. This is not a "we can't do anything
19 about this." They can be made better. CAL/FED is
20 looking at how to do that. We're looking at another
21 several hundred million dollars of investment that we in
22 our industries have to make.

23 In this particular county, one of the fastest
24 growing in the State. 31 percent of the growth for the
25 nine Bay Area counties is going to occur in the Contra

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1 Costa Water District. We're 400,000 today. We could be
2 700,000 by the turn of the century. It's very fast
3 growing. We have done our 50-year water supply planning.
4 We have got that on the shelf. We're not relying solely
5 on the CVP. We have options transfers. We're in a
6 million-dollar VIR now to shore up our supply.

7 We're not standing pat. We're not saying to
8 people, we're here to resist, at all steps of the way,
9 because we don't want to do anything. We are doing -- we
10 want to be proactive. At the same time we're looking for
11 what kind of a standard is going to be applied. And the
12 standard for us is, where are we on the trend for what
13 the water supply sources need to be for the 20 million
14 users of the Delta?

15 Where are we on the National Standards Chart?
16 And how does a new project that comes in and says, we're
17 going to help you somehow. And the way that's said is
18 "no harm." I think the burden of proof is on "help" not
19 status quo, may be a little bit of harm. I know it's a
20 lot more than a little bit of harm. If you look at this
21 as we have to divert every day. Even with our reservoir
22 we have such a narrow diversion schedule that are days
23 when somebody could say, well, you can blend out of the
24 reservoir, but we can't keep that reservoir where we need
25 for salinity blending if we all of a sudden have to do

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1 that because of a TOC issue. That has a harm to us.

2 We're not sure -- and I think Bob Maddow raised
3 it, we're not sure what the words mean when they say "we
4 will be junior to other senior rights." And then there
5 are other words that say: Biological opinions were
6 incorporated by reference to water rights proceedings.

7 I understand why we did that for Los Vasqueros,
8 because we didn't want a water rights proceeding given
9 the constant change and nature of biological opinions.
10 But biological opinions and operating criteria are what
11 are running the State right now. You can have a water
12 right, but it is not worth anything with the biological
13 opinion diversion schedules.

14 Now, where are we on that? Think where we are.
15 The Bay-Delta Accord is expired -- or will be expiring
16 and has to be renegotiated. The Department of Interior
17 comes out, what, two weeks ago, and says to implement the
18 AFRP. What do we have to do? We need to take another
19 million acre feet out of the supply for California during
20 dry years, 4 to 500,000, and there is no accountability
21 to how the 800,000 on the CVPI has been used. So all you
22 can do is get into this additive process. That gets
23 shoved over to CAL/FED and says, you need to come up with
24 new operating rules either as part of your no-project
25 alternative, your pass through, you have to figure how

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1 this is all going to work. That is the context for this.

2 In that context you got the CVP/EIS about to
3 come out which talks about how they're going to deal with
4 this issue. We got the 800,000. We've got the Bay-Delta
5 Accord. I think, when I said this is unprecedented, I've
6 never seen anything like this. The umbrella for all that
7 is supposedly CAL/FED. Now, some of us can sit around
8 and debate whether CAL/FED is ever going to produce
9 something. But it's the only show in town. And it's our
10 best hope. And so my question to you, or my issue to you
11 would be:

12 How can you make a determination on how this
13 project is going to work within the CAL/FED overall
14 umbrella without at least keeping the record open until
15 you see their November Draft EIS/EIR, which will
16 speculate on what the operating rules ought to be for the
17 current users and for future users. And then start to
18 put forth a preferred alternative for meeting that.

19 Now, this is in the CAL/FED alternative, not
20 this particular project but an in-Delta storage. The
21 question is: Is that in-Delta storage a redirection of a
22 CVP water right that will allow the CVP to deliver more
23 water like they should be to the south Delta exporters
24 like San Louis, Delta Mendota who can't get their water
25 now because of biological opinion pumping? Is it a

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1 rediversion storage? Is it a new one as proposed?
2 Is it mitigation for a sites reservoir that could produce
3 the water quality that we need as the urban users on the
4 south side through what we would call a high-quality
5 urban pipeline? Others would call it an isolated
6 facility. Well, I'm sure we'll engage on that matter. I
7 know Dan Nomellini says we will.

8 MR. NOMESELLINI: I heard you, Walter.

9 MR. BISHOP: But as I look at it in the absence of
10 that record in this proceeding, the context that's needed
11 to determine harm-to-others impact on the State is a big
12 whole. Now, does that mean that the State Board doesn't
13 have a legal obligation to hold a water rights proceeding
14 and take testimony? Absolutely not. I'm not here to say
15 this is incompatible with CAL/FED. There some is aspects
16 that could put it right in loggerheads with CAL/FED
17 preferred alternative.

18 Does it mean that you don't open the record,
19 take testimony, draw conclusions? I don't know how you
20 can make all the findings without knowing what the
21 CAL/FED agencies, of which the State Board is one, are
22 proposing as operating rules for existing users as well
23 as new projects and how that is mitigated with a series
24 of projects and biological opinions and the assurances
25 that we say we have to have out of CAL/FED. CAL/FED is

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1 here to provide context of long-term reliability, meet
2 the beneficial uses; one of which is key water quality
3 impacts to urban. Here we are to say, this is an
4 isolated project.

5 Another issue comes up for us in terms of water
6 quality. One of the concerns we have is because of
7 the -- you'll hear from our two doctors here, TOC's
8 bromide salinity. That we're going to try to deal with
9 those with some type of operating criteria. That would
10 be, in my mind, synonymous with saying: We're going to
11 build a 700-million dollar sewage treatment plant up
12 stream of an intake. And if we cannot find a way to
13 mitigate that once its built, we're going to do
14 something.

15 It may be that the technology doesn't exist but
16 to do anything but move it. I don't think that's the
17 basis of which conclusions are reached. I think what you
18 do is keep the record open, propose discharge
19 limitations, because the only way in my mind you can deal
20 with TOC and salinity issue, when it is clearly going to
21 be a pollutant. Pollutant meaning -- when I came into
22 the room and I saw that picture over there and I had to
23 laugh, Penn Mine. I was with you, the State Board, all
24 the way up where we lost all the way up saying there's an
25 exemption there for levees, or dams, or whatever you want

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1 to call it, what they said was: If you build it out of a
2 reactive material if by impounding that water pollutants
3 come into it from peat soils, or levees, or whatever and
4 then you want to discharge that, and some days you
5 discharge it you're better than the background water
6 quality and other days you discharge it you're not
7 better.

8 But knowing how the Delta works like a big
9 washing machine, Maytag and back and forth, what we end
10 up with is nobody can deal with this mass emission
11 loading, daily maximum, seven-day running average,
12 monthly average, annual limits per this permit. This is
13 going to be a pollutant. This is going to be discharge.
14 In the nature of where this is being built and how it's
15 being built creates almost the identical scenario we have
16 over there.

17 Now, someone would say, it's being built here
18 because one of the beneficiaries are M&I. Well, I'm not
19 sure if that was the original purpose, but once you find
20 out that water is at 2 to \$400 an acre foot there's not a
21 lot of takers on the ag side at that price. So it
22 becomes M&I. Well, when I locate a reservoir 20 feet in
23 depth and a large evaporation pond in a highly reactive
24 area of the Delta, where if it sits there on an average
25 ten-month cycle salinity increases by evaporation. You

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1 put it on peat soils in an area where we're concerned
2 about TOC's and you turn around and say, one of the
3 beneficiaries is going to be M&I.

4 Well, the two biggest are here, Metropolitan
5 Water District South of Delta diverter, which is where we
6 see some benefit for this project, they're here to tell
7 you that they had a problem with the water quality.
8 We're the largest in-Delta urban user and we're here to
9 tell you: We have a problem with the water quality.

10 So if -- you have to make a finding that there's
11 a benefit and there's a class of users, unidentified but
12 one of which is M&I, and clearly they're the most logical
13 from the pricing structure of this, and the M&I people
14 are here today saying there is a problem with water
15 quality. We don't see how this doesn't harm us from a
16 water quality standpoint. I think we have to re-think
17 this.

18 Now, CAL/FED is going to do that. There's no
19 doubt in my mind that CAL/FED has to look at this in the
20 context of how they're going to met the M&I users. And
21 coming from Contra Costa County, the home of the
22 anti-peripheral canal, there was nothing I liked better
23 than to get the water quality the urban users need
24 without an isolated facility. So I'm not here
25 advocating: Don't build this. Let's build an isolated

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1 facility. That's not what I'm saying.

2 I'm saying there's no way I can come to a
3 conclusion that locating this facility at this location
4 has any benefit to an M&I user from a water quality
5 standpoint. And before you can make the conclusion that
6 this is a hydraulic issue, you can divert more water at
7 the South Delta pumps. If you put water here and you
8 release it at certain times, there is a whole host of
9 issues, one of which is the one that is very parochial to
10 us and that is under the biological opinions.

11 You could have a scenario if we don't have terms
12 and conditions that really work that says because we have
13 a X2 limit further down river than this X2, apparently,
14 got from the fishery agencies, then, in fact, they could
15 turn on their pumps, delay the period of time for water
16 coming down to Chipps Island and we're precluded from
17 pumping just because they're harvesting water.

18 So it's important to me when someone says we
19 will honor the water rights based on junior and senior
20 water rights. Say, the biological opinions are even more
21 important. And quite frankly, every time someone's
22 biological opinion changes you got to re-sort the whole
23 picture again, because today it could be okay, but those
24 biological opinions are changing as we speak with the
25 Bay-Delta Accord re-negotiations, the CVP issues are on

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1 the table, and also we re-sort the deck and say, what was
2 okay today for a biological opinion, no harm to others,
3 is not okay today, because there's now harm.

4 I'm not sure how you deal with that, but it
5 seems to me if someone is trying to create a legal
6 separation by the way the wording is, it's incumbent upon
7 you to look at that and say: How does that work legally?
8 Because if they don't want to be in here as part of a
9 water rights proceeding, but want it administratively
10 referred to as the administrative process that's
11 delegated to sufficiently allow us to come forward and
12 say, this just didn't work? We are harmed. The review
13 of this indicated we wouldn't be. I don't know how that
14 works, quite frankly. And I'd ask you to have full
15 clarification on that before you make your findings,
16 because that's a big question to us.

17 Well, let me just summarize, and I need to move
18 on here. Number one: We think it's very difficult for
19 you to make the findings you need to find outside the
20 context of CAL/FED, CVP, EIS, and the Bay-Delta Accord
21 re-negotiations. I think that's very difficult and I
22 would ask you keep the record open at least until the
23 CAL/FED EIR/EIS can be entered into with the operating
24 rules that they're proposing and their decision on this
25 project.

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1 Actually, it's very intellectually stimulating
2 to say you could be -- we could be here today over the
3 last hearing process coming up with a set of findings and
4 rules, and what better mirror back to us as to whether
5 we're right or not is when CAL/FED comes out and says,
6 well, this is what we found when we looked at the same
7 project. It will be right back to us. And I know -- and
8 I don't want to say bigger is better, but the hundred of
9 thousands of dollars that have been spent on this
10 compared to the tens of millions that are going to be
11 spent on the analysis work being done as CAL/FED will
12 give us a good test as to whether this is resource, or
13 decision making.

14 Secondly, we think the water quality issues are
15 real. And the way we think you ought to deal with those,
16 if you go forward, is there ought to be an NTDES permit
17 as to what comes off of this island. And you really need
18 the burden of proof that what's coming off this island,
19 if it's going to be sold to the M&I users, that the M&I
20 users have set forth to you a set of standards that they
21 would take that water under and that you verify that
22 there is no impact, in fact, that there's a net benefit
23 to the Bay-Delta when the water quality that comes off of
24 this island. I think that's important.

25 And, finally, we would ask, and we'll talk about

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1 as we go along, that our water rights be protected and
2 that includes our biological opinion. And how we all --
3 it's not just Contra Costa, how we all in the State have
4 to operate under those biological opinions and how
5 they're going to be changed constantly. CAL/FED says, a
6 deal is a deal. Once we come out and we have the
7 assurances in place, a deal is a deal. I believe that.
8 We're in the last year of Bay-Delta Accord and a deal is
9 a deal.

10 The Fish and Wildlife Service comes out with an
11 AFRP that says, I know a deal is a deal, but we want a
12 million more in dry years, and 400,000 in wet years and
13 that's outside the Accord. And that may be true, but I
14 know how the State Corps are reacting. And that's a
15 larger context for what I see what would happen under the
16 biological opinions if it's not carefully worded here.

17 I don't know if you have any questions, I do
18 have to be at -- somewhere at 10:00, but I'd be glad if
19 there's any questions from the Board.

20 HEARING OFFICER STUBCHAER: Staff, do you have any
21 questions of Mr. Bishop? Mr. Brown.

22 MEMBER BROWN: No. Thank you for your
23 participation and information.

24 MR. BISHOP: Thank you. I appreciate it.

25 HEARING OFFICER STUBCHAER: Thank you.

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1 MR. MADDOW: Mr. Stubchaer, several of the CCWD
2 witnesses have not been sworn, Dr. Gartrell, at least one
3 other. I'd ask you administer the oath.

4 HEARING OFFICER STUBCHAER: All right. Thank you.
5 You promise to tell the truth in this proceeding?

6 DR. GARTRELL: I do.

7 HEARING OFFICER STUBCHAER: Thank you. You may be
8 seated.

9 MR. MADDOW: District's first witness is
10 Dr. Gregory Gartrell. Dr. Gartrell, could you -- I just
11 gave your name. Could you, please, state your
12 occupation.

13 DR. GARTRELL: Yes. I'm the Director of Planning of
14 Contra Costa Water District.

15 MR. MADDOW: Is CCWD Exhibit 1B an accurate summary
16 of your education and professional experience?

17 DR. GARTRELL: Yes. It is.

18 MR. MADDOW: Could you briefly summarize that
19 experience that you believe is relevant to this Delta
20 Wetlands's proceeding, in general, in the Bay-Delta in
21 particular?

22 DR. GARTRELL: Yes. I was educated at the
23 California Institute of Technology in hydraulics and
24 water resources. Following that, I spent three years as
25 the viceman research fellow at CalText. I was six years

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1 as a consultant including to the State Board in the
2 1987's Water Quality Control Plan hearings. Since 1988
3 I've been in the Contra Costa Water District. I worked
4 on and developed the water quality and water supply
5 information for the permitting of the Los Vaqueros
6 Project.

7 I led the Ag Urban Technical Team that developed
8 the proposal that led to the 1994 Bay-Delta Accord. And
9 I signed the Accord on behalf of the District. I
10 represent the Ag Urban Group at the CAL/FED'S OPS Group.
11 And I am chair of a no-name group, which is part of the
12 OPS group charged with developing consensus and working
13 on issues related to the operations of the State and
14 Federal Projects with respect to the Accord.

15 I am co-chair of the ecosystem roundtable which
16 is a committee -- an advisory committee BDAC for CAL/FED.
17 I am chair of the modeling group recently established by
18 Secretary Garamendi for implementing the CDPIA V2 water
19 proposal. I'm chair of the Operations and Facility's
20 Team for the Ag Urban work groups on working on CAL/FED.
21 I received the 1997 Hugo B. Fischer Award for my work in
22 developing models in the Delta.

23 And subsequent to the submission of my statement
24 of qualifications, I received the 1997 Excellence in
25 Water Leadership Award for the Association of California

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1 Water Agencies in my development in the implementation of
2 the Bay-Delta Accord.

3 MR. MADDOW: And is it true you somehow find time
4 to coach a Little League team?

5 DR. GARTRELL: Yes.

6 MR. MADDOW: I haven't figured out how you do that
7 yet. Dr. Gartrell, did you prepare CCWD Exhibit 3, or
8 was it prepared under your direction?

9 DR. GARTRELL: Yes.

10 MR. MADDOW: And could you briefly summarize for us
11 the purpose of your statement in Exhibit 3?

12 DR. GARTRELL: Yes. Good morning, Mr. Stubchaer,
13 and Mr. Brown.

14 HEARING OFFICER STUBCHAER: Good morning.

15 DR. GARTRELL: I would like to make three main
16 points in the summary of my testimony, focus on those.
17 One is on the operation studies for this project. They
18 were not completed properly and it's incorrectly
19 concluded that the project will improve water quality at
20 our intakes. Furthermore, the modeling was completed in
21 a way that understates some impacts, but overstates the
22 potentials of export water. And, therefore, the yield of
23 the project.

24 Second, I'm going to focus on the parameters
25 that I feel are unrealistic as -- that have been used as

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1 a test of significant impacts, and as a result it's been
2 incorrectly concluded that significant impacts are
3 insignificant. And, finally, I'm going to focus on terms
4 that are required in order to protect CCWD as a senior
5 appropriator and Delta user and -- including specific
6 terms required in any permits that might be issued to
7 protect our rights.

8 Contra Costa Water District receives water
9 primarily from the Central Valley Project under a
10 contract I75R-3401 as amended May 26th, 1994. That
11 contract provides for deliveries up to 195,000 acre feet
12 per year. Our maximum deliveries have been somewhat over
13 135,000 acre feet. Although, recent diversion has been
14 more in the range of 100,000 to 120,000 acre feet per
15 year.

16 CCWD also holds license 3167 and permit 19856 to
17 divert water at Mallard Slough, but due to water quality
18 constraints, CCWD typically diverts much less than the
19 maximum allowable, and in some years none at all. In the
20 City of Antioch and Gaylord, the container within the
21 customers of Contra Costa District also divert under
22 their water rights from the San Joaquin River. And when
23 they are restrained from diverting because of water
24 quality, divert from the Contra Costa Canal.

25 Water rights Decision 1629 provided additional

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1 water rights to CCWD for the Los Vaqueros Project under
2 permits 20745 and 20750. That decision also amended CVP
3 water rights to allow CCWD to divert and re-divert CVP
4 water at Old River. As mentioned by Mr. Bishop,
5 construction is being completed this fall. We anticipate
6 that -- actually, our new diversion point is being tested
7 as we speak with respect to the screen. We expect it to
8 be on-line in about 30 days or so. The dam is being
9 built at a rather astounding rate than -- at the moment.
10 We -- sometime between September and December we expect
11 that to be completed, in part, depending on the weather.

12 CCWD has protested the Delta Wetlands's
13 applications, because of the proposed -- because of
14 proposed appropriations would, we believe, would injury
15 us in both -- with respect to our water rights and water
16 quality, and would impair the District's water supply.
17 CCWD found that the Draft EIR/S to be wholly inadequate
18 on numerous grounds. And that's described in Exhibit 5
19 and also will be discussed by Dr. Denton. And we believe
20 that no permits should be issued until errors in the
21 analyses in that document are corrected.

22 We have examined the operations study for the
23 Delta Wetlands Project, some aspects of which are
24 discussed in Exhibit 3, and found that there are several
25 flaws in this analysis. First, the operation studies of

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1 the Delta Wetlands Project were studied without direct
2 connection into the DWRSIM Operation Model.

3 This sort of analysis prevents an interaction
4 between the two projects and can easily result in
5 erroneous conclusions, particularly about yield. I am
6 personally unaware of any studies on a project of this
7 magnitude where interaction with State and Federal
8 facilities has been not modeled this way. And what's
9 more remarkable is the fact that the project envisions
10 the use of these facilities.

11 In the -- even in the Los Vasqueros Project with
12 diversions 10 to 20 times smaller than anticipated here,
13 we re-operated the model to determine all impacts. The
14 CAL/FED alternatives also modeled within the DWRSIM
15 Model. We have on numerous occasions advised the project
16 proponents that failure to do these studies properly
17 would cause the results to be questioned at best, and be
18 invalid at worse, as discussed in Exhibit 5.

19 The failure to correctively do these analyses
20 has, unfortunately, resulted in some invalid results.
21 One result is -- relates to the potential yield of the
22 project, and the other relates to the incorrect
23 conclusion that the project will decrease salinity at the
24 District's intakes.

25 On yield, first, the studies do not accurately

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1 indicate the availability of water pumping capacity in
2 the future when CVP and SWP combined exports will be
3 expected to be higher, and inflows reduced into the Delta
4 because of increased upstream diversions. Consequently,
5 project yield is likely to be overstated since both
6 upstream use and future CVP and SWP demands are likely to
7 rise. And as a consequence, pumping capacity and surplus
8 flow will be reduced.

9 The operations study incorrectly assumed that if
10 there's pumping capacity at the State and Federal export
11 facilities, then there's room to export additional water.
12 Well, there's often export capacity at the State and
13 Federal facilities at Tracy and Banks without being a
14 place to put the water. You have to have a demand. You
15 can have a situation quite easily where the reservoirs
16 are full; you're in a period when there is no demand and
17 there's no place to put the water.

18 An example with us, you can look at our pumping
19 capacity and now that it's increasing. We have an
20 enormous amount of pumping capacity. If we turned it all
21 on, we'd have water running down the streets of Antioch
22 very quickly out of the canal, because there's no place
23 for the water to go. You have to do more than just look
24 at the pump plants for capacity. You have to look
25 downstream. And this hasn't been done.

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1 The second item is: The failure to fully
2 simulate the project with the -- and that relates to the
3 question of: What happens to water when you stop
4 diverting it on Delta islands? Now, it's been assumed a
5 reduction in agricultural diversions on the islands will
6 always decrease -- will always increase Delta outflow.
7 And, thereby, decrease salinity at CCWD's intakes. And
8 it's been incorrectly concluded that this constitutes a
9 project benefit.

10 In fact, this is only likely to occur when the
11 Delta is not in balance conditions and that is when
12 outflows tend to be high, and salinity low. When the
13 Delta is in balance conditions, State and Federal
14 Projects are releasing water in order to meet Delta flow
15 and salinity requirements and reduced ag diversions are
16 not likely to result in any increased outflow. And
17 that's for two reasons.

18 In their balance conditions the projects are
19 either trying to meet a salinity condition, or an outflow
20 requirement. If they're trying to meet a salinity to
21 condition they will operate to the same salinity level no
22 matter what the Delta diversions are. They do not keep
23 track of what the Delta diversions are in the Delta right
24 now. What they do is they watch the meters on the
25 stations that they're -- that -- where their controlling

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1 standard is. If that rises they turn up the valves, or
2 they turn down the exports and increase outflow. So they
3 will go to the same level, the same salinity level. The
4 water that's not diverted, or extra water that is
5 diverted is either stored, or lost, or exported, but it
6 doesn't go to outflow.

7 In the other case where there is balanced
8 conditions and they're trying to meet an outflow, the
9 Water Quality Control Plan conditions in their call for a
10 Delta outflow to be measured with the best available
11 information on -- or -- on diversions within the Delta.
12 As -- if this project were to be implemented, the
13 consumptive use it's assumed for operating the projects
14 would be changed. And as a consequence, the water
15 outflow would go back to the same level.

16 In either case, there's not an increase in
17 outflow. There's not a decrease in the salinity at our
18 intakes. And the supposed benefits that have been
19 claimed would not occur.

20 We were very careful to do this kind of
21 re-operation of the studies for Los Vasqueros, which
22 involved very small flow changes, 200 csf or less
23 compared to this project, in order that we would
24 accurately characterize impacts and not inadvertently
25 miss impacts. The failure to do this re-operation here

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1 has resulted in assertions of water quality benefits that
2 are not likely to occur. And incorrect conclusions have
3 been drawn as a result

4 This leads into the second major point that I
5 mentioned earlier, also is discussed in Exhibit 5, and
6 that's the use of these unrealistic parameters that test
7 for significance. Normally, project impacts are measured
8 against a base case and changes are measured relative to
9 the base case.

10 This Draft EIR/EIS, instead, measured impacts
11 not against a base case, but against a worse case which
12 is unrealistic. Using 20 percent of the standard as a
13 significant test raises the bar so high that anything can
14 pass under it. And you can say, well, that's no impact.
15 In some instances, as Dr. Denton will describe, there are
16 a lot of things passing under that bar that are
17 significant impacts. It can allow in some cases a
18 doubling of salinity at our intakes or more. And this --
19 the -- the degradation of this source should be measured
20 against the base line, and not against the worse
21 permitted situation which does not fully protect CCWD and
22 its customers.

23 Now, in terms of the water rights for CCWD,
24 we're concerned that the operation of this project
25 without specific terms and conditions would allow Delta

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1 Wetlands as a junior appropriator, with the capability to
2 divert an enormous amount of water. To divert water in a
3 way that could prevent CCWD as a senior water rights
4 holder from diverting waters provided under our permits.

5 To prevent this, we've proposed a specific term
6 of conditions that should be incorporated into any and
7 all Delta Wetlands's permits, should any permits be
8 issued. The permit term on page 12 and 13 of Exhibit 3
9 provides that Delta Wetlands is not authorized to divert
10 if it would have an adverse affect on the operation of
11 the Los Vasqueros Project, the operation of the
12 District's water supply intakes or those of its
13 groundwater customers, or the USBR in support of CCWD's
14 operations under any water rights permit or license,
15 including those terms and conditions which impose
16 limitations on operations under any applicable State or
17 Federal law.

18 An adverse affect would be deemed to result
19 from diversion by Delta Wetlands if it caused CCWD, or
20 its groundwater customers to reduce diversion, or
21 re-diversion from the Delta, or release water from
22 storage, or otherwise prevent CCWD from diverting, or
23 re-diverting water.

24 This term will prevent Delta Wetlands, as a
25 junior appropriator, from diverting such large quantities

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1 of water that CCWD will prevent it from diverting water
2 under its water rights. Including those terms in the
3 water rights which restrict diversions in some periods to
4 conditions when X2 is west of Chipps Island. These terms
5 have been incorporated through our biological opinions.

6 Without such terms, Delta Wetlands could divert
7 water at such a rate to move X2 to east of Chipps Island
8 forcing CCWD, the senior appropriator, to cease
9 diversions and thus incurring our rights as a senior
10 appropriator.

11 CCWD also believes that if a permit is to be
12 issued, conditions should be placed in a permit that
13 would allow the Department of Water Resources and the
14 Bureau of Reclamation to make the determination if
15 there's surplus water available. Delta Wetlands's
16 operations must be coordinated with CVP and SWP since the
17 Delta Wetlands Project would -- could easily interfere
18 with their senior rights.

19 Third permit term that I think is required
20 relates to the Delta Protection Act. Exports of water
21 from the Delta are governed by the Delta Protection Act,
22 which provides for salinity control and an adequate water
23 supply for users of water in the Sacramento/San Joaquin
24 Delta. Delta Wetlands's would be a junior appropriator
25 to the State and Federal Projects. And, therefore, would

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1 not be allowed, and should not be allowed to divert water
2 or release water in a way that interferes with salinity
3 control, or deprives Delta users of an adequate supply or
4 otherwise injures them.

5 Again, Delta Wetlands's operations are large
6 enough to interfere with senior appropriators in the
7 Delta, as mentioned previously. For example, their
8 diversions could cause salinity intrusions to a level
9 that would prevent CCWD from diverting water to nonslough
10 intake, or prevent the City of Antioch, or Gaylord from
11 diverting water at their intakes, or any other Delta
12 users with diversions, particularly those in Western
13 Delta. Consequently, if any permits are issued they
14 should contain provisions that prevent Delta Wetlands
15 from operating in a way that causes a Delta diverter to
16 halt, or alter its diversions.

17 Because Delta Wetlands's operations have the
18 ability to reduce Delta outflow significantly, Delta
19 Wetlands can cause significant salinity intrusion. And
20 this will be, again, discussed in some detail by
21 Dr. Denton. This was evident in the analysis of the
22 project in the Draft Environmental Documentation. The
23 biological opinions have, to a certain extent, reduced
24 the levels to which this can occur, but not to such a
25 degree that Delta users are fully protected.

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1 Furthermore, biological opinions can be changed
2 which would then remove these same protections. Delta
3 Wetlands has relied upon terms of the biological opinions
4 to claim reduced impacts on other users. And if those
5 terms are removed, far greater impacts would occur.
6 Consequently, a permit term should be included if any
7 permits are issued that will limit diversions through
8 those periods when X2 is west of Chipps Island, west of
9 71 kilometers, which provides an adequate buffer.

10 This doesn't eliminate all impacts to salinity
11 diversion -- intrusion especially to western Delta water
12 users. However, it does in a reasonable way reduce the
13 risk of Delta Wetlands -- the water users that will have
14 to provide their own -- otherwise would have to provide
15 their own mitigation for Delta Wetlands impacts.

16 Delta Wetlands has said they rely on high
17 outflows for their project. This term would ensure that
18 this is the case. This term would be in addition to
19 those suggested by California Urban Water Agencies which
20 are required to prevent degradation to Delta water
21 quality due to the use of Delta Wetlands Project, of the
22 Delta pool by which Delta Wetlands proposes to transfer
23 water through the system. The CUWA proposals are
24 designed to protect from the discharges. And the ones
25 related to X2 are designed to protect from the

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1 diversions.

2 Also, as discussed on pages 16 and 17 of
3 Exhibit 3 there are -- certain assumptions have been made
4 as to water availability and conditions for discharges
5 for this project. Impacts of the proposed project
6 outside of those assumptions have not been adequately
7 evaluated and could be significant. Additional
8 documentation would be necessary to allow any diversion
9 outside of the export/inflow relationship as described in
10 the biological opinion.

11 If the permit is issued the permit should not
12 allow water to be diverted except for the amount
13 remaining within the specified export/inflow ratio for
14 that month after all other water quality plan
15 requirements have been met; and all of the senior water
16 rights have been appropriated within those water quality
17 control plan requirements and pumping requirements --
18 pumping capacities as described in the biological
19 opinion.

20 Finally, given the CAL/FED process and time
21 line, this project appears premature. CAL/FED is also
22 examining in-Delta storage, but alternatives have
23 included direct connection to the export pumps to avoid
24 putting fish and wildlife in a double-jeopardy from a
25 double Delta diversion. It's not known at this time what

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1 alternatives will come out of the CAL/FED process, but
2 that process may certainly make other alternatives more
3 viable and better suited for protecting water quality and
4 Delta supplies.

5 In summary I'd like to just briefly state,
6 again, the assumptions in the operations study and the
7 failure to operate the project within the model have
8 resulted in incorrect conclusions regarding water quality
9 improvements and project yield; inappropriate
10 significance criteria have resulted in significant
11 impacts being labeled insignificant. We believe the
12 draft environmental documentation is wholly inadequate.

13 If the Board does choose to issue a permit,
14 those permits should contain and, actually, must contain
15 terms suggested in Exhibit 3 to protect CCWD as a senior
16 appropriator and as a Delta user as well as the water
17 rights discussed in this must protect CCWD and its
18 customers from seawater intrusion caused by the project
19 by limiting diversions to those periods when X2 is west
20 of Chipps Island and must include the terms suggested by
21 California Urban Water Agencies; and it must limit
22 operations to those analyzed and included in the
23 biological opinions.

24 This concludes the summary of my testimony.

25 MR. MADDOW: And, Dr. Gartrell, I -- just one

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1 follow-up question based on an early part of your
2 testimony. As I understand it you were responsible for
3 Contra Costa Water District's future water supply
4 planning?

5 DR. GARTRELL: Yes.

6 MR. MADDOW: And from the perspective of that
7 finding, would Contra Costa Water District want the water
8 which could be produced by the Delta Wetlands Project?

9 DR. GARTRELL: No. And there's a couple reasons
10 for that. Our recently completed future water supply
11 study looked out to the year 2040. It identified our
12 most immediate needs, our supplies in periods of
13 shortage. And from examination of the project
14 operations, Delta Wetlands has water when we don't need
15 it and doesn't have water when we do.

16 It also -- the costs considerations that the
17 numbers I understand have been placed in the water at 200
18 to \$300 an acre foot are beyond that which we would
19 consider in the -- in our purchase -- water purchases.
20 That's aside from the water quality issue.

21 MR. MADDOW: Thank you.

22 Contra Costa's next witnesses is Dr. Richard
23 Denton. Dr. Denton, could you state your occupation,
24 please.

25 DR. DENTON: My name is Richard Denton, and I'm the

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1 Water Resources Manager for the Contra Costa Water
2 District.

3 MR. MADDOW: Mr. Stubchaer, I'm embarrassed to
4 admit that when I introduced the District's team before,
5 I neglected to mention the name of an important member of
6 that team, and that's Larry McCollum who is the
7 District's Water Quality Superintendent and who is among
8 that group of District persons available for
9 cross-examination. He has been previously sworn.

10 HEARING OFFICER STUBCHAER: Thank you.

11 MR. MADDOW: Dr. Denton, does CCWD Exhibit 1C
12 accurately summarize your education and experience.

13 DR. DENTON: Yes, it does.

14 MR. MADDOW: Could you briefly describe your
15 professional experience that is relevant to this Board's
16 consideration of the current applications?

17 DR. DENTON: I'm a registered Civil Engineer in
18 California and have a Ph.D. in Civil Engineering from the
19 University of California -- University of Canterbury in
20 New Zealand. I have 26 years of experience in the field
21 of hydraulics and contaminate transport, and have worked
22 on San Francisco Bay and Delta issues since 1982.

23 Prior to joining the District in 1989, I was on
24 the faculty of the Civil Engineering Department at the
25 University of California at Berkeley. As part of my work

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1 at U.C. Berkeley I prepared four reports for the State
2 Board on currents and salinity in San Francisco Bay.
3 That was in 1985 and 1986.

4 I also received the Hugo B. Fisher Award from
5 the Bay-Delta Modeling Forum in 1985 in recognition of my
6 work in developing a salinity-outflow model for the
7 Bay-Delta and for my use of that model in developing and
8 analyzing elements of the State Board's X2 and X3
9 estuarine habitat standard. However, after listening to
10 Dr. Gartrell's impressive list of qualifications, I'd
11 like to add that I work with Dr. Gartrell.

12 MR. MADDOW: Dr. Denton, did you prepare CCWD
13 Exhibit 4, or was it prepared under your direction?

14 DR. DENTON: Yes, it was.

15 MR. MADDOW: And did you prepare CCWD Exhibit 5, or
16 was it prepared under your direction?

17 DR. DENTON: Yes. That was an effort of the Water
18 Resources Group in Contra Costa, which I currently
19 direct.

20 MR. MADDOW: Dr. Denton, you've been present
21 throughout the hearing. Did you hear Dr. List's
22 testimony and review his original and corrected versions
23 of CUWA Exhibit 14A?

24 DR. DENTON: Yes, I did.

25 MR. MADDOW: There is an assertion in that report

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1 at page four that the Delta Wetlands Project would
2 improve water quality for CCWD's Los Vasqueros reservoir.

3 Do you agree with that assertion?

4 DR. DENTON: No, I don't agree with that.

5 MR. MADDOW: Could you summarize for the Board how
6 the Delta Wetlands Project would impact water quality for
7 CCWD?

8 MS. BRENNER: Excuse me?

9 HEARING OFFICER STUBCHAER: Yes.

10 MS. BRENNER: I hate to raise these constant
11 objections, but I find it necessary, at least for the
12 record, to state an objection that Mr. Denton is not
13 testifying as to his direct testimony. It could be
14 considered rebuttal, or you could consider it something
15 else, but it's certainly not direct testimony. None of
16 this information is contained in his written testimony.

17 HEARING OFFICER STUBCHAER: We haven't heard the
18 information yet.

19 MS. BRENNER: The question itself --

20 MR. MADDOW: The question -- excuse me.

21 MS. BRENNER: Go ahead.

22 HEARING OFFICER STUBCHAER: Mr. Maddow.

23 MR. MADDOW: The question which I asked him was
24 could he summarize the impact of the Delta Wetlands
25 Project on water quality for the Contra Costa Water

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1 District. And that is the subject of his Exhibit 4,
2 which he is about to summarize.

3 MS. BRENNER: That's not the question that I heard.
4 The question was going towards the errata that was
5 provided by John List, which would be classic rebuttal.
6 It would be the same type of question if you asked any
7 cross-examine, or rebuttal question that says: What
8 about the testimony that was submitted by Delta Wetlands?
9 That's the question. That's the force and effect of that
10 particular question.

11 Now, if you ask him what does he think about the
12 project, that's a different question than if you're
13 asking him to evaluate what Delta Wetlands submitted as
14 direct testimony. I see a very distinction -- a very
15 clear distinction there.

16 HEARING OFFICER STUBCHAER: Thank you, Ms. Brenner,
17 Mr. Maddow. As you're all aware, the purpose of the
18 direct testimony is to summarize the written testimony
19 and not to introduce new information. That does come at
20 a different point in time in this proceeding. And with
21 that understanding, please -- please, proceed.

22 MR. MADDOW: May I reiterate the question and,
23 again, I'm just attempting to reiterate the question,
24 which I believe was the original one I posed. And that
25 was: Dr. Denton, how would the Delta Wetlands Project

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1 impact water quality to the Contra Costa Water District?

2 DR. DENTON: Yes. As we have already heard from
3 Dr. Brown with regard to Delta Wetlands's Exhibit 12 and
4 Dr. Shum in his testimony, the Delta Wetlands Project has
5 the potential to significantly impact the quality of
6 water delivered to the District's 400,000 customers, both
7 when Delta Wetlands diverts water on to its island
8 causing additional water and intrusion, and later when it
9 discharges water from the islands.

10 Diversions of the -- onto the Delta Wetlands
11 islands of up to 9,000 csf could increase dramatically
12 seawater intrusion at the District's three Delta intakes,
13 Rock Slough, Old River near Highway 4, and Mallard Slough
14 near Chipps Island, unless Delta Wetlands water is
15 diverted during periods of very high Delta outflow.

16 Under the Federal biological opinions, Delta
17 Wetlands will not be able to divert water when they're
18 very low at their outflows, because there will not be any
19 surface flow. However, the biological opinions do allow
20 Delta Wetlands to divert up to 25 percent of the Delta
21 outflow as long as X2 is west of Collinsville and there
22 is surplus flow.

23 This ends up allowing Delta Wetlands to reduce
24 Delta outflow from about 9,500 cfs to as low as
25 7,100 csf. The 7,100 csf is the Collinsville equivalent

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1 outflow for X2. You could put up Figure 1. This is
2 Figure 1 from CCWD Exhibit 4. And it shows the
3 simulation of the seawater intrusion that can occur with
4 reductions in Delta outflow using the results from the
5 new Delta Wetlands operations study using DeltaSOS which
6 Dr. Brown discussed.

7 These are the Rock Slough chlorides. This is
8 calculating the Rock Slough chloride changes resulting
9 from Delta Wetlands's operations. These were calculated
10 using Contra Costa salinity outflow model, known as the
11 G Model. A similar approach has been used by Dr. Brown
12 on page 11 and discussed on -- Dr. Brown on page 11 of
13 the Delta Wetlands's Exhibit 12. He used an effective
14 outflow approach to simulate changes in salinity due to
15 changes in outflow.

16 During times that Delta Wetlands's reservoirs
17 are either diverting, or discharging the outflows from
18 the Delta with and without the project, are identical in
19 Dr. Brown's DeltaSOS study. So you can see during those
20 times that there's prolonged periods when the Delta --
21 the Delta Wetlands Project is neither diverting or
22 filling, then you'll see that the salinities are
23 unchanged. They're on the one-to-one relationship.
24 However, at times when Delta Wetlands is filling, then
25 there is a reduction of Delta outflow and a corresponding

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1 increase of salinity due to seawater intrusion.

2 The most significant increase in this diagram is
3 26 milligrams per liter, or an increase of about 48
4 percent in the chlorides at Rock Slough. This is about
5 the 60 -- or 55 milligrams per liter chlorides under the
6 no-project case.

7 It is interesting to note that the greatest
8 impacts that are occurring in this particular diagram are
9 not occurring when Delta Wetlands is dis -- diverting at
10 9,000 csf, because under the biological opinions they are
11 not able to divert unless the outflow is initially
12 36,000 csf, because they have the 25 percent of Delta
13 outflow limitations.

14 So it's not actually that the very high
15 diversions rates that cause the problems. It's the
16 cases, as I mentioned earlier, that where the Delta
17 Wetlands is reducing the Delta outflow from 9,500 csf
18 down to 7,100 csf.

19 HEARING OFFICER STUBCHAER: Excuse me, how can you
20 tell that from this graph? I don't see any relationship
21 from the flows to the dots.

22 DR. DENTON: Right. These flows came out of the
23 DeltaSOS study.

24 HEARING OFFICER STUBCHAER: But this --

25 DR. DENTON: This is from inspecting the data

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1 behind the graphics.

2 HEARING OFFICER STUBCHAER: Is there any
3 correlation between the position on the graph and the
4 flow, or is it random?

5 DR. DENTON: There is, because of this effective
6 outflow approach that obviously -- well, if you have a
7 period of very low outflows you would expect to have very
8 high salinity because of seawater intrusion. So in
9 general, in a cumulative, cumulative outflow sense you
10 can say the times of highest salinity are the times of
11 lowest Delta outflow.

12 And that's why they're very high in there,
13 you're not going to see as many changes in salinity due
14 to the Delta Wetlands Project, because those would be
15 periods when there would be no surface flow. Similarly,
16 at the very low end if you're down at 25 chlorides that
17 would be, in general, a period when there would be very
18 high Delta outflows and any diversions by Delta Wetlands
19 would be a small increase -- or decrease of that. So
20 there you will not see an impact either.

21 It's somewhere in between that you get this
22 affect. So it is very hard I admit from that graphic to
23 find out the exact points, but if you look at it in more
24 detail and using the data that went into it is that
25 period of time when the Delta outflow is reduced out to a

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1 very low level.

2 HEARING OFFICER STUBCHAER: Thank you.

3 DR. DENTON: And my point in raising that is that
4 there would be a temptation to say maybe 9,000 csf is a
5 large diversion, maybe we should limit Delta Wetlands to
6 a smaller diversion. That's not what we're asking for,
7 because even if you limit it to 3,000 csf diversion,
8 those large impacts would still occur. So that what you
9 need to do is limit their diversions based on the
10 cumulative outflow that they should not divert with a
11 cumulative outflow less than a certain value, or you can
12 do that through that X2 parameter which takes into
13 account the cumulative outflows.

14 And as Dr. Gartrell has suggested that Contra
15 Costa Water District is recommending that this be set
16 at -- that Delta Wetlands should under no conditions in
17 any month divert water when X2 is less than 71
18 kilometers. And that provides a buffer from the X2
19 condition at Chipps Island condition; X2 at Chipps Island
20 is 74 kilometers.

21 MR. MADDOW: Dr. Denton, can you now tell us about
22 the impacts on Contra Costa -- water quality effects on
23 Contra Costa related to discharges from the Delta
24 Wetlands islands?

25 DR. DENTON: Before I do that, perhaps, I can give

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1 an example. You were asking about when these impacts
2 occur. If you could put up the next graphic --

3 MR. SUTTON: Excuse me, Dr. Denton, in your
4 previous statement you said you wanted Delta Wetlands to
5 be prohibited from diverting whenever X2 is less than 71?

6 DR. DENTON: I'm sorry, when X2 is greater than 71.

7 MR. SUTTON: Greater than 71.

8 DR. DENTON: Only being able to divert when X2 is
9 greater than 71.

10 MR. SUTTON: Thank you.

11 DR. BENTON: This is a figure from Dr. List's
12 testimony. I think it's Delta Wetlands 14B. And my
13 purpose in putting this up here is a number of the
14 graphics that I have in my direct testimony are based on
15 data prior to this errata being released. And so I felt
16 that it was better to use data that had been put into the
17 testimony already by Delta Wetlands and has already been
18 shown several times in front of the Board.

19 And I just want to point out that there are
20 several occasions on the upper part of this graph, which
21 is Figure 20 from Delta Wetlands's Exhibit 14B, that show
22 that -- the times when the diversions are greater than a
23 thousand csf, corresponding with the points below the
24 lines when return flows, or discharges.

25 If you look at the filling periods that occurs

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1 down at the bottom there's dates and there are calendar
2 years. If you look at about 1926 -- Dr. Shum will find
3 that, 1926 there -- there is a diversion occurring but
4 there is no increase in salinity due to seawater
5 intrusion at that time. The reason for that is that the
6 Delta outflow at that time was 30,000 csf. And the
7 diversion rate was about 29,000 csf. So that is a time
8 when X2 is beyond -- or less than 71 kilometers and there
9 is no impact.

10 However, if you go to the next event of filling,
11 which is in 1927 -- it's actually, November of 1926,
12 there was a diversion of 3,000 csf. The Delta outflow at
13 that time was 12,000 csf and was reduced down to 9,000
14 csf. So that is a period when you can see that there is
15 a significant change in salinity due to that filling of
16 the Delta islands. If you look at the TDS, it's 200 TDS
17 change. It changes from 200 TDS, for instance, up to the
18 peak change of 380 TDS, which is actually less than a
19 hundred-percent change of TDS.

20 However, if you convert that into the
21 appropriate unit, which is chlorides for that area,
22 Holland Tract is very close to Rock Slough. Rock Slough
23 has a 250 milligrams per liter chloride standard. So if
24 you look at that in terms of chlorides the 200 TDS
25 converts to about 45 chlorides. And the 380 TDS converts

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1 to about 145 chlorides. So there you have, as a result
2 of that diversion of 3,000 csf when the Delta outflows
3 were reduced down to 9,000 csf, you get a change of
4 chlorides close to the Rock Slough's intake of a hundred
5 chlorides. So these are the things that we are concerned
6 about.

7 While that graphic is up there, just you'll
8 notice as well that during the times of discharge in 1927
9 and then in 1928, even when they discharge there is
10 increase in salinity as a result of that; obviously, much
11 smaller than the seawater intrusions. Thank you.

12 MR. MADDOW: Shifting, Dr. Denton, to the question
13 of water quality impacts related to discharges.

14 DR. DENTON: Yes. This has been discussed by
15 Dr. Shum and I will not talk about this in detail. There
16 were basically reasons that we are concerned about the
17 discharges from the Delta Wetlands islands.

18 One reason is the Delta Wetlands -- Delta
19 Wetlands's diversions onto the islands will tend to be
20 made during periods of higher than average salinity.
21 That will mean that when you -- and also when they go to
22 discharge, another reason that you would have an impact
23 is that they will be tending to discharge during periods
24 of lower than average salinity.

25 If you could put up, Dr. Shum, Figure 2. Just

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1 to remind the Board it has been discussed previously but
2 this is Figure 1 from Dr. Gartrell's Exhibit 3 for CCWD.
3 And here we're just showing the average diversion rate
4 and the average discharge rate from the Delta Wetlands
5 operations study. These are from the DeltaSOS runs
6 provided to us by Delta Wetlands.

7 And, again, you can see that the primary months
8 of filling are October, November, December, January, and
9 February. And maybe September is also -- could be a
10 significant filling month. When it comes to discharges,
11 clearly, July and August are going to be the primary
12 months when discharges will be appearing from the Delta
13 Wetlands Project. So that needs to be kept in context
14 when we look at the water quality.

15 If Dr. Shum could then put up Figure 4 from CCWD
16 Exhibit 4, which shows a similar effect of the filling --
17 the timing of the filling and discharges from Delta
18 Wetlands islands related to dissolved organic carbon.
19 During times -- the early part of each water year there
20 tends to be high DOC, because of agricultural drainage
21 into the Delta. During times when the Delta Wetlands
22 Project will be discharging, the last couple of months in
23 each of the water years, is the time when the DOC in the
24 Delta is going to be lowest.

25 So, again, this is the point that we're trying to

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1 get across. The times of filling and draining of the
2 reservoirs in -- for the Delta Wetlands Project is not
3 conducive to improving water quality in the Delta.

4 Another reason that there could be a water
5 quality problem is with respect to Figure 2 in my
6 testimony, CCWD Exhibit Number 4. And that is just to,
7 again, reiterate that there is a concern that water could
8 be stored on the Delta Wetlands islands for long periods
9 of time. We have -- there have been discussions that the
10 median might be about ten months. But if you look at the
11 period 1983 through 1985, this is a period when water is
12 stored on the islands for possible sale for 24 months.

13 And in this particular case, the reason that
14 water wasn't discharged from the reservoirs was that
15 during that period of time there was sufficient surplus
16 flow in the Delta; that the operation studies did not
17 allow the water to be discharged for sale because they
18 were taking into account the fact that that water would
19 not be wanted if there was already surface in the Delta.

20 There's no guarantee that that would be the
21 upper limit on the time that water would be stored on the
22 Delta -- on the island. There could be periods,
23 prolonged wet periods where it could be stored for even
24 longer. And the longer water is stored on the island,
25 the more degradation could occur due to organic material

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1 build up and evaporation of salts on the islands, or at
2 least the water from the islands and the concentrations
3 of salts.

4 One thing also to bear in mind is that we have
5 heard testimony that water could be on the islands year
6 round, but even when the Delta Wetlands's islands are
7 empty and not being used to store water for sale -- as
8 for example, in 1977 you can see that the reservoir is
9 empty. And the operations studies during that time,
10 there is a suggestion that at least one foot of water
11 would be stored on that island for habitat reasons. So
12 there still would be degradation going on, there still
13 would be evaporation going on from those islands.

14 MR. MADDOW: Dr. Denton, with regard to the
15 agricultural operations on the four Delta Wetlands
16 islands, would there be -- could you summarize your
17 testimony with regard to the relationship between
18 agricultural drainage from the Delta Wetlands islands in
19 the current condition, and what the circumstance be
20 should the Delta Wetlands Project be -- be approved?
21 Could you summarize that testimony, please?

22 DR. DENTON: Yes. Excuse me, leave it off. Yes.
23 Dr. Shum, if you could put up Figure 15.

24 DR. SHUM: Yes.

25 DR. DENTON: This is Figure 15 from my exhibits,

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1 Contra Costa Water District Exhibit Number 4. A large
2 portion of the benefit that is attributed to the Delta
3 Wetlands Project is from the reduction in diversions --
4 agricultural diversions, existing agricultural diversions
5 onto the Delta Wetlands islands.

6 And this was something that we were concerned
7 about in reviewing this data that the improvements that
8 were coming out of the modeling studies performed by
9 Dr. List were during periods of time -- for instance,
10 1933 and 1934 when the reservoirs islands were actually
11 empty. This was during the drought period. The
12 reservoir islands had been drained early in the drought
13 and were unable to fill during the rest of the drought.
14 So this is a period of time when the Delta Wetlands
15 Project wasn't actually operating.

16 However, you can see that in 1933 and 1934 there
17 is a significant reduction in the salinity at the Old
18 River intake, which is the intake that Contra Costa Water
19 District uses to fill the Los Vasqueros Project and to
20 take direct diversions to the District.

21 So we had a concern about that. And it was only
22 later with -- with the -- looking in more detail at some
23 of the material that was coming from Delta Wetlands and
24 later at the errata that it became clear that this was
25 because of Dr. List's assumption within his modeling that

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1 there was going to be this increase in Delta outflow.

2 If you could put up the next -- the Old River
3 Highway -- yes, this one here. So this is, again, the
4 errata taken from Dr. List's testimony from Delta
5 Wetlands's Exhibit 14B. And, again, as a result of the
6 errata there have been a number of points removed from
7 this figure that were well below the line that has been
8 discussed already.

9 However, there is still a number of figure -- a
10 number of data points that are below the line at the high
11 salinity end. And, again, as I discussed a few minutes
12 ago, high salinity end is -- would be more likely to be a
13 time when the Delta is in balance, because the project
14 would then have to respond to those high salinities. And
15 Dr. Gartrell has already discussed this.

16 What we are saying is that there is not this
17 increase in Delta outflow. There would be no increase in
18 Delta outflow. There would be balance conditions. So
19 those data points that are there should go back up on to
20 the line. There should be an one-to-one relationship.
21 There should be no improvement if the modeling studies
22 were done properly; if the modeling studies were done in
23 conjunction with the CVP and State Water Project
24 operations. You would get that those points would be on
25 the line.

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1 What you would end up with then is that there
2 would be points on the line, in other words, no
3 degradation. And then there would be a great deal of
4 points above the line, which would be due to seawater
5 intrusion impacts. And the net effect would not be, as
6 Table 1 of Dr. List's testimony Exhibit 14B, that there's
7 a 3.1 milligrams per liter TDS improvement in delivered
8 chlorides at -- for the Contra Costa Water District. In
9 fact, you would end up with a net degradation.

10 HEARING OFFICER STUBCHAER: Ms. Brenner.

11 MS. BRENNER: This is rebuttal. You know I'm going
12 to state an objection for the record, again. This is
13 clearly rebuttal. We will have our opportunity to go
14 through this as rebuttal testimony. I'll be more than
15 happy to cross-examine Dr. Denton on all these figures
16 then, and will today, because it's been allowed in.

17 HEARING OFFICER STUBCHAER: Can you point,
18 Mr. Maddow, point out where this is in the direct
19 testimony?

20 MR. MADDOW: Well, Figure -- this line of
21 discussion began with Figure 15 in CCWD Exhibit 4. It's
22 page 42 of Mr. -- of Dr. Denton's testimony. And he
23 testified about not understanding where the apparent
24 water quality benefit came from. Okay. That's what he
25 said.

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1 And then what he said was that when we received
2 the errata, which was a correction of the -- of the
3 materials we had previously received, that he was then
4 able to understand where the error that he's testified
5 about in his written Exhibit 4 came from. And this is
6 being used by way of illustration to explain what that
7 error that he talked about in his Exhibit 4 came from.
8 We're using that by way of illustration, and it's solely
9 for that purpose.

10 HEARING OFFICER STUBCHAER: Ms. Brenner?

11 MS. BRENNER: He's talking about an error. He's
12 directly rebutting our direct testimony. That's what
13 he's doing.

14 MR. MADDOW: What he's attempting to do is to
15 explain something that is in his written testimony which
16 he now understands. At least --

17 MS. BRENNER: Which in that --

18 HEARING OFFICER STUBCHAER: One at a time.

19 MS. BRENNER: Which he now understands after he has
20 submitted his direct testimony.

21 HEARING OFFICER STUBCHAER: In the absence of an
22 error, an alleged error, would this errata have been in
23 the original documents?

24 MS. BRENNER: Yes.

25 HEARING OFFICER STUBCHAER: I mean the correction

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1 would have been in the original document?

2 MS. BRENNER: Would have been in the original
3 direct testimony submitted at the same time as CCWD has
4 to submit their direct testimony. That's the purpose of
5 the case in chief is summarize what you've submitted in
6 your direct testimony, not to counter what other persons
7 have submitted at the same time.

8 MR. MADDOW: Ms. Brenner has just hit right on the
9 heart of it, Mr. Stubchaer. Our Exhibit 4 was prepared
10 based upon the material which had been provided to the
11 Contra Costa Water District by Dr. List prior to the
12 evidence submittal date. Now, we prepared -- we prepared
13 our Exhibit 15 -- excuse me, Figure 15 in that Exhibit 4
14 based upon material we had received from Dr. List.

15 We couldn't figure it out -- we knew that there
16 was something wrong with it. Dr. Denton testified to
17 that, it's in his Figure 4. Couldn't figure out what was
18 wrong with it until they corrected it. Now, we can do
19 this now in what I consider to be a fairly orderly and
20 efficient way from the standpoint of consideration of the
21 Board's time, or we can do it through rebuttal.

22 But the point is: They corrected data they
23 provided to us at the time we were preparing the exhibits
24 that Dr. Denton is now summarizing. We said in that
25 exhibit that there was a problem. We now know what the

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1 problem was. And what we're doing is illustrating that
2 by way of reliance upon evidence they've introduced after
3 they found out what their error was.

4 Now, I think that what we're doing is
5 illustrating the point that's made in our direct
6 testimony and I think that's permitted under your rule.

7 HEARING OFFICER STUBCHAER: That was the reason for
8 my inquiry to find out what point in time this
9 information that is in the errata should have been known
10 by you so whether or not it would have been included in
11 your direct testimony.

12 MR. MADDOW: It most certainly would have been
13 included in our direct testimony, because it's -- you
14 know, it's right at the heart of something we talked
15 about. And it was a critical consideration of ours as we
16 prepared our direct testimony. We couldn't understand
17 the assertions of net benefits, because the data didn't
18 show it. Then when the data was corrected we understood.

19 HEARING OFFICER STUBCHAER: Understand.

20 Ms. Brenner, do you have any comment?

21 MS. BRENNER: My comment is just I reiterate is,
22 what it is is rebuttal. I mean what Mr. Maddow has
23 explained is clearly what is considered rebuttal
24 testimony. And I want the record to reflect that we
25 object to it on those grounds.

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1 How much more time do you have, Mr. Maddow?

2 MR. MADDOW: We were just discussing it. I think
3 we're within probably about five minutes of completing
4 Dr. Denton.

5 Is that right, Dr. Denton?

6 DR. DENTON: Yes.

7 HEARING OFFICER STUBCHAER: All right.

8 MR. MADDOW: About five minutes.

9 HEARING OFFICER STUBCHAER: Fine.

10 MR. MADDOW: Could you continue with your
11 testimony, again, Dr. Denton?

12 DR. DENTON: Yes. My only comment was that
13 obviously the District's concern is: What is the impact
14 on the Delta Wetlands Project on water quality intake at
15 our intakes, and also on the performance of the Los
16 Vasqueros Project.

17 And I would like to say that -- recommend that
18 these operation studies will need to be re-run including
19 re-operation of the State Water Project and CVP
20 facilities to enable the District to make an accurate
21 assessment of the real impacts of the Delta Wetlands
22 Project on the CCWD.

23 MR. MADDOW: Dr. Denton, can you summarize your
24 testimony with regard to the potential effect of
25 operation of the Delta Wetlands Project under various

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1 operation scenarios on Contra Costa Water District?

2 DR. DENTON: Yes. As discussed on -- in CCWD
3 Exhibit 3, on page 9, we are concerned that there may be
4 other operations of the Delta Wetlands Project that would
5 be permitted under the biological opinions that could
6 have an impact on Contra Costa Water District's water
7 quality that really haven't been analyzed here.

8 And, in specific, I'm thinking of a situation
9 where Delta Wetlands water may be purchased and used
10 in -- used to meet the Rock Slough standard. For
11 instance, if the water projects found that the salinity
12 at the Rock Slough intake was approaching 250 milligrams
13 per liter chloride they might suggest to Delta Wetlands
14 that they buy the water and release that water into the
15 Delta to meet that standard. And that is one of
16 suggested places of use, or purposes for that Delta
17 Wetlands water is to use for increasing Delta outflow.

18 That example, for example -- or that example
19 would be a situation where there would be water of
20 potentially high organic carbon content being released
21 into the Delta adjacent to the Rock Slough intake at a
22 time when the salinities and, therefore, the bromides
23 were particularly higher, in fact, as high as the Board
24 would allow them to be in terms of the Water Quality
25 Control Plan.

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1 So there you have that sort of combination of a
2 source of organics mixing with a high salinity content
3 and that could be a time when there would be an increased
4 risk of production of disinfectant by-product. So that
5 really wasn't covered in the operations study, but it's
6 something that needs to be considered as a possible
7 affect of the Delta Wetlands's Project operations if
8 operated differently than what's been studied in the
9 DeltaSOS studies.

10 MR. MADDOW: And, finally, Dr. Denton, could you
11 describe water quality permit terms which you believe
12 would be protective of CCWD should the Delta Wetlands
13 water rights permits be issued?

14 DR. DENTON: Yes. Just very briefly, the Contra
15 Costa Water District does support the water quality
16 permit terms proposed by the California Urban Water
17 Agencies. These permit terms were outlined in CUWA
18 Exhibit 7, starting at page 16. And they limit Delta
19 Wetlands discharges to times when the water quality of
20 the stored water is equal, or better than the ambient
21 water in the channels.

22 MR. MADDOW: And, Mr. Stubchaer, that concludes our
23 direct case.

24 HEARING OFFICER STUBCHAER: Very well. And we'll
25 start the cross-examination after the morning break.

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1 (Recess taken from 10:25 a.m. to 10:38 a.m.)

2 HEARING OFFICER STUBCHAER: Now, Mr. Maddow, we
3 have a housekeeping -- well, first of all -- first of all
4 we're going to reconvene the hearing.

5 MR. MADDOW: Thank you, Mr. Stubchaer. The
6 housekeeping matter is that I discovered that while I
7 thought I was taking care of getting each of the people
8 who will be available for cross-examination to be sworn,
9 two of them were actually outside of the room at the
10 time.

11 One of them is now in the room and they just
12 sent out a messenger to get the other. We do have two
13 people who have not yet taken the oath, Dr. Briggs and
14 Mr. Darling have not taken the oath.

15 Could you, please, stand, please.

16 HEARING OFFICER STUBCHAER: Please raise your right
17 hand. You promise to tell the truth in these
18 proceedings.

19 DR. BRIGGS: I do.

20 MR. DARLING: I do.

21 MR. MADDOW: Thank you, Mr. Stubchaer. And with
22 that our two witnesses and backup people are available
23 for cross-examination.

24 HEARING OFFICER STUBCHAER: I'd like a show of
25 hands of the parties who intend to cross-examine. Okay,

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1 Delta Wetlands.

2 MS. BRENNER: Another request, Mr. Stubchaer.

3 HEARING OFFICER STUBCHAER: Let me guess.

4 MS. BRENNER: Yesterday we found it quite
5 enlightening that some of the members of the CUWA group,
6 sort of speak, decided to conduct what I consider
7 redirect questions. And I think that the Board
8 recognized that those were actually a type of redirect
9 questioning after Delta Wetlands had conducted their
10 cross-examination of CUWA.

11 Today what we'd like to do is go last and allow
12 the parties that have true cross-examination to ask true
13 cross-examination of Contra Costa Water District. And we
14 will ask our cross-examination questions in the end.
15 Mr. Maddow will have an opportunity to conduct true
16 redirect, which is the person that should be doing this
17 in this instance, and then we can ask recross, or anybody
18 else can, based on that scenario.

19 I think that it would provide a much fairer
20 hearing and eliminate some of the problems that we had
21 yesterday with regard to redirect. We took away our
22 position on asking some of the questions that we wanted
23 to ask. We know that we have an opportunity to ask some
24 of those questions today of some of CCWD's people,
25 witnesses that are available. That's why we were okay

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1 with doing that. I don't want to run into that problem
2 again today. And I think by going last it will alleviate
3 any such problem.

4 HEARING OFFICER STUBCHAER: I'm going to find out
5 if the other parties are ready to proceed with their
6 cross-examination, or if they were expecting to follow
7 you.

8 Is the Department of Water Resources is ready to
9 cross-examine?

10 MS. CROTHERS: Yes. I just have one question.

11 HEARING OFFICER STUBCHAER: Just one question.
12 Fish and Game?

13 UNIDENTIFIED MAN: Yes.

14 HEARING OFFICER STUBCHAER: All right. Without
15 objection we will take Delta Wetlands cross last then.

16 MS. BRENNER: Thank you.

17 HEARING OFFICER STUBCHAER: And Ms. Crothers.

18 MS. BRENNER: What about CUWA?

19 HEARING OFFICER STUBCHAER: I only call those who
20 raise their hands. Maybe they weren't in the room.

21 MS. BRENNER: They weren't.

22 HEARING OFFICER STUBCHAER: Well, then we'll get to
23 them in the usual order then.

24 //

25 //

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2 ---oOo---

3 CROSS-EXAMINATION OF CONTRA COSTA WATER DISTRICT

4 BY THE DEPARTMENT OF WATER RESOURCES

5 BY CATHY CROTHERS

6 MS. CROTHERS: My name is Cathy Crothers, with the
7 Department of Water Resources.

8 HEARING OFFICER STUBCHAER: Good morning.

9 MS. CROTHERS: Good morning. Sorry, we were out in
10 the hall talking. This question is for Dr. Gartrell.

11 And in your testimony this morning you mentioned
12 that -- that DWR and Contra Costa Water District, they
13 have a contract. The 1967 contract involving the Mallard
14 Slough water that Contra Costa Water District receives
15 reimbursement from the Department.

16 When there are a certain numbers of days that
17 there is an unusable amount of water at Mallard Slough
18 near Chipps Island, do you expect that the Delta Wetlands
19 Project would cause a decrease in the number of days of
20 available water for Contra Costa at the Mallard Slough?

21 DR. GARTRELL: Yes, I do.

22 MS. CROTHERS: Have you calculated, or estimated
23 how many days of this reduced availability might occur?

24 DR. GARTRELL: No, I haven't.

25 MS. CROTHERS: Okay. Thank you.

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1 HEARING OFFICER STUBCHAER: Thank you. Will those
2 of you who were not in the room when we reconvened, we
3 are changing the order of cross-examination of this
4 panel. Delta Wetlands will be last. Next will be
5 Department of Fish and Game.

6 Ms. Murray.

7 ---oOo---

8 CROSS-EXAMINATION OF CONTRA COSTA WATER DISTRICT

9 BY THE DEPARTMENT OF FISH AND GAME

10 BY NANCEE MURRAY

11 MS. MURRAY: Good morning. I'm Nancee Murray with
12 the Department of Fish and Game. Couple of questions for
13 you, Mr. Gartrell.

14 In your testimony you refer generally to
15 biological opinions. Do you know did the Department of
16 Fish and Game issue a biological opinion to CCWD for the
17 Los Vaqueros Project?

18 DR. GARTRELL: Yes, under a couple of agreements.

19 MS. MURRAY: Okay. Does CCWD also have a 20 --
20 Fish and Game Code 2081 agreement with the Department of
21 Fish and Game for the Los Vaqueros Project?

22 DR. GARTRELL: That's correct.

23 MS. MURRAY: And isn't it true that the -- that
24 CCWD's 2180 agreement contains specific conditions
25 addressing the potential fishery impacts for their

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1 project in providing mitigation for those impacts?

2 DR. GARTRELL: That's correct.

3 MS. MURRAY: And isn't it true that that 2081
4 agreement includes specific monitoring plans which are
5 linked to specific operation responses to avoid and
6 minimize impacts to Delta smelt and winter-run salmon?

7 DR. GARTRELL: Yes.

8 MS. MURRAY: Thank you. Couple of questions for
9 you, Mr. Denton. You talked a little bit about this
10 yesterday and I just want to add a couple of points.

11 In your testimony, you state that the actual
12 duration of storage could be longer than Delta Wetlands
13 anticipates after a wet period when water demand might be
14 low. Is that correct?

15 DR. DENTON: Yes.

16 MS. MURRAY: You further state -- stated that this
17 increased time of storage could lead to a potential
18 increase in organic carbon concentration. Do you recall
19 that.

20 DR. DENTON: Yes.

21 MS. MURRAY: Could this increased storage time also
22 affect biological oxygen demand in the stored water?

23 DR. DENTON: Yes.

24 MS. MURRAY: Could this increased storage time also
25 affect dissolved oxygen in the stored water?

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1 DR. DENTON: I'm not an expert on this necessarily,
2 but the longer the period of time that the water is on
3 the island the effects that could occur -- we've already
4 taken into account if it's on there longer than that, it
5 could have more of an effect.

6 MS. MURRAY: And in your written testimony you
7 state that the water quality impacts due to an increase
8 in an organic carbon concentration in the Delta Wetlands
9 discharge water has not been modeled, and that the
10 magnitude of this potential impact is significant.

11 Is that correct?

12 DR. DENTON: Would you repeat the question?

13 MS. MURRAY: Okay. In your written testimony --

14 DR. DENTON: Right.

15 MS. MURRAY: -- page 23 you state that the water
16 quality impacts due to the increase in organic carbon
17 concentration in the Delta Wetlands discharge has not
18 been modeled -- it's not been sufficiently modeled and
19 the magnitude of this potential impact is significant.

20 DR. DENTON: Yes, that's what I said.

21 MS. MURRAY: Okay. So, do you think this
22 corresponding potential impact which you just identified
23 for biological oxygen demand could also be significant?

24 DR. BENTON: That could also be significant and
25 should be modeled.

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1 MS. MURRAY: Okay. And this -- the other
2 corresponding potential impact for dissolved oxygen that
3 we just discussed, could that also be significant?

4 DR. DENTON: Yes. I think in all these situations
5 if there is a possibility that water could be stored on
6 the islands for longer than 24 months that should be
7 modeled and studied in any case.

8 MS. MURRAY: Okay. Thank you. No further
9 questions.

10 HEARING OFFICER STUBCHAER: Thank you. I have a
11 question, exercise my prerogative and go out of order,
12 but if you know the answer: How important is wind on
13 mixing in a body of water? And how much does -- if any
14 does that contribute to the dissolved oxygen?

15 DR. DENTON: Dr. Shum?

16 DR. SHUM: I think I can take a stab at that.
17 The --

18 MR. MADDOW: Excuse me, Dr. Shum, could you just
19 identify yourself for the record.

20 DR. SHUM: K.T. Shum. The wind mixing can decrease
21 stratification in any water bodies. And, therefore,
22 promote the dissolution of oxygen from the air in the
23 water body. And, therefore, the winds can increase the
24 oxygen concentrations.

25 HEARING OFFICER STUBCHAER: Okay. Thank you.

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1 Is there any other party that wishes to cross-examine
2 this panel? I see no one else.

3 Ms. Brenner, or, Ms. Schneider, whoever is going
4 to do it.

5 ---oOo---

6 CROSS-EXAMINATION OF CONTRA COSTA WATER DISTRICT

7 BY DELTA WETLANDS PROJECT

8 BY ANNE SCHNEIDER

9 MS. SCHNEIDER: Thank you, Mr. Stubchaer. I have
10 questions and then Ms. Brenner has some additional
11 questions. My first questions are to Dr. Gartrell.

12 How is your Little League team doing?

13 DR. GARTRELL: Twelve and one, but I wouldn't take
14 credit for keeping that chaos down in the dugout.

15 MS. SCHNEIDER: I have some questions that have to
16 do with your testimony that it's CCWD's position that it
17 agrees with CUWA's suggested DOC and salinity terms.

18 It's correct that you agree with CUWA's position
19 that four milligrams per liter DOC limit should apply to
20 Delta Wetlands's diversions; isn't that correct?

21 DR. GARTRELL: That's correct.

22 MS. SCHNEIDER: Can you tell me what the range of
23 DOC, or TOC at your Rock Slough diversion is?

24 DR. GARTRELL: I think the range has been in the --
25 from my memory the two to ten milligrams per liter, but I

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1 would refer to Mr. McCollum to give the more precise
2 answer.

3 MR. McCOLLUM: Whatever you want to call them,
4 water quality super ten. Historically, the range has
5 been in the two to ten range. More recently, with
6 specific testing for the Federal ICR Information
7 Collection Rule, in the last 12 months is ranged from
8 about two to five and a half, five and a half peaking
9 with the flood waters that hit.

10 MS. SCHNEIDER: What is the range at your Old River
11 intake.

12 MR. McCOLLUM: We don't have the historic
13 background at Old River that we have at Rock Slough. And
14 I don't have that off the top of my head.

15 MS. SCHNEIDER: Has Contra Costa ever stopped
16 diverting because DOC levels were above four?

17 MR. McCOLLUM: No.

18 DR. GARTRELL: Not to my knowledge, no.

19 MS. SCHNEIDER: Are CCWD's diversions ever limited
20 solely because of the DOC levels?

21 DR. GARTRELL: They have not been in the past, but
22 that doesn't preclude them from that in the future.

23 Dissolved --

24 MS. SCHNEIDER: My question was just in the past up
25 until now.

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1 DR. GARTRELL: Right, and I'm explaining my answer.
2 Because of the continuing increase in the rules that the
3 District has to operate under and because of the Los
4 Vaqueros Project and our concerns about water quality in
5 Los Vasqueros, that is going to be a consideration of the
6 future.

7 MS. SCHNEIDER: On the other side of the CUWA DOC
8 term, you agree with CUWA's view that Delta Wetlands
9 discharge water should not exceed ambient DOC levels?

10 DR. GARTRELL: That's correct. We believe that we
11 should not be mitigating for Delta Wetlands's impacts.

12 MS. SCHNEIDER: As to the actual DOC levels in the
13 discharge water, that term is equivalent, is it not, to a
14 zero-change significance criterion?

15 DR. GARTRELL: That is correct.

16 MS. SCHNEIDER: Just to clarify the DOC discharge
17 term, doesn't it prevent Delta Wetlands from discharging
18 for export if its discharge water is higher in DOC than
19 the channel water DOC level?

20 DR. GARTRELL: I believe that term allowed for
21 discharges at higher levels under certain conditions.

22 MS. SCHNEIDER: Well, it looks from the term like
23 the only way that Delta Wetlands can so-call "get rid of
24 the water" that it has in storage if its water DOC is
25 above ambient channel conditions is to dribble it out at

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1 a very low rate and only during extremely high Delta
2 outflows, when Old and Middle River have a net seaward
3 flow.

4 For the 840 months in the 70-year record, how
5 months did Old and Middle River have a net positive
6 seaward flow?

7 DR. GARTRELL: I don't have that number off the top
8 of my head. Do you?

9 DR. DENTON: That would be -- Delta Wetlands would
10 have to wait for that opportunity to come along again to
11 take that water off the island.

12 MS. SCHNEIDER: It could be something like 17 out
13 of those 840 months, couldn't it?

14 DR. DENTON: It could well be.

15 MS. SCHNEIDER: So Contra Costa wants Delta
16 Wetlands's stored water to be released slowly and only
17 during very large storm events if DOC levels in the
18 stored water is any higher than channel DOC, no matter
19 what the DOC effect at Contra Costa's pumps might be at
20 the time?

21 DR. GARTRELL: I disagree with the statement that
22 it's only during very large storm events. There could be
23 other conditions when State and Federal pumps are not --
24 are at low levels with respect to the San Joaquin
25 influence that would cause that.

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1 DR. DENTON: And if I could just add, that
2 particular discharge term was only there -- we had
3 assurances in the past from Delta Wetlands that there
4 will not be a problem when Delta Wetlands islands, that
5 there will not be a large load up in TOC or salinity on
6 the islands.

7 We just wanted for our own security to have a
8 term that if the Delta Wetlands did degrade beyond
9 repair, essentially in terms of water quality, that there
10 would be a way of getting rid of that water.

11 MS. SCHNEIDER: So you're suggesting that maybe a
12 zero-change significance criterion, or a water right term
13 that reflects that, it's not what you're actually asking
14 for?

15 DR. DENTON: There's three parts to those permit
16 terms. The main one is Delta Wetlands should not injure
17 Contra Costa Water District by releasing water of a
18 higher ambient salinity or TOC.

19 And the other ones are basically to what happens
20 if the water quality on the island is sufficiently bad
21 that it could never otherwise be released; how do you
22 then get the water off that island?

23 And then the third one is: What is the point of
24 Delta Wetlands putting water onto the island at something
25 like ten TOC when the range of TOC in the Delta is only

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1 from two to ten, under those -- that situation there
2 would -- it's unlikely to be a situation where they would
3 have ambient conditions to allow them to release that.

4 So in operating it would be sensible for Delta
5 Wetlands to take on water of good quality so that they
6 would have some room, you know, to discharge good quality
7 water.

8 MS. SCHNEIDER: So your understanding of the CUWA
9 term is different than the actual language of the CUWA
10 term?

11 DR. DENTON: I think that is consistent with what
12 is in the CUWA term.

13 MS. SCHNEIDER: Is it true that the CUWA term says
14 that Delta Wetlands can't discharge if its DOC levels
15 exceed ambient channel conditions?

16 DR. DENTON: Yes. And that's what I said here.

17 DR. GARTRELL: TOC.

18 DR. DENTON: Yes, again, we're using TOC and DOC
19 interchangeably in the sense that TOC is what is
20 regulated; DOC is what has been measured; as Dr. Krasner
21 pointed out that TOC and DOC are essentially the same in
22 terms of the management.

23 MS. SCHNEIDER: Well, it seems like we have to get
24 some clarity about the interpretation of this term. And
25 I guess I ask you to take a look at the term and read to

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1 me the language about when Delta Wetlands can discharge
2 water, in particular, when Delta Wetlands TOC levels are
3 above ambient channel conditions.

4 DR. DENTON: Well, okay, on page 17 of CUWA
5 Exhibit 7, for instance, it begins:

6 No stored water shall be discharged from the
7 Delta Wetlands islands if the TOC of that water exceeds
8 the ambient TOC in the receiving water except under the
9 following conditions.

10 So that sets the first one, that there would be
11 a no-greater than ambient discharge stored within -- the
12 next sentence:

13 Stored water on the islands with a TOC above
14 ambient TOC can be discharged for export if it is treated
15 to a concentration of ambient TOC, or lower prior to the
16 discharge.

17 MS. SCHNEIDER: Okay, but go on:

18 If it's not treated and it's still higher TOC,
19 what happens to it? It has to be dribbled out; isn't
20 that correct?

21 DR. DENTON: That is -- that is up to Delta
22 Wetlands. You would be in a situation --

23 DR. GARTRELL: Or treat it.

24 DR. BENTON: Or treat it.

25 MS. SCHNEIDER: Thank you.

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1 MR. MADDOW: Just for clarity of the record, I
2 didn't want you speaking on top of one another. I'll
3 just caution you to make sure you don't have two people
4 talking at the same time.

5 MS. SCHNEIDER: Contra Costa has a policy goal for
6 salinity level of its own diversions?

7 DR. GARTRELL: Yes.

8 MS. SCHNEIDER: Your testimony doesn't reflect any
9 similar policy goal for DOC, or TOC. Does CCWD have a
10 written policy goal for DOC, or TOC similar to its
11 salinity goal?

12 DR. DENTON: That is something we are actually
13 establishing at this time --

14 MS. SCHNEIDER: But --

15 DR. DENTON: -- not at this time. In preparation
16 for the Los Vaqueros Project, the emphasis was at that
17 time on salinity. And so there was a 65 milligrams per
18 liter chloride goal; and a 50 milligrams per liter sodium
19 goal. And at that time that was the focus on salinity
20 improvement for the Delta.

21 However, as a number of people have mentioned,
22 there's been a lot of changes in regulations and Safe
23 Drinking Water Act since then that we will need to have
24 constituents label for all water and goals.

25 MS. SCHNEIDER: Looking at your salinity terms that

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1 you want to adopt from CUWA, your testimony is that Delta
2 Wetlands should not divert if total dissolved solids
3 exceed 180 milligrams per liter, which is about less than
4 50 milligrams per liter; is that correct?

5 DR. DENTON: Yes.

6 MS. SCHNEIDER: So this requirement for Delta
7 Wetlands would be even more restrictive than Contra
8 Costa's self-imposed 50 milligrams per liter chlorides?

9 DR. DENTON: In terms of filling that would be the
10 case. But remember the Delta Wetlands islands are very
11 shallow, more like an evaporation pond. And that at the
12 time that the water would likely be discharged, then it
13 would be -- we were accounting for the fact that it would
14 be up to about 220 milligrams per liter TDS.

15 MS. SCHNEIDER: Is it correct that your primary
16 concern is with the water that is discharged?

17 DR. DENTON: Certainly.

18 MS. SCHNEIDER: So is this use of a diversion
19 limitation just a guide that would help Delta Wetlands
20 not make a terrible mistake?

21 DR. DENTON: I think that would be fair to say.

22 MS. SCHNEIDER: Okay.

23 DR. DENTON: We are concerned that if water were to
24 take on a very high salinity the water sitting there
25 would be the possibility that Delta Wetlands could appeal

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1 to the State Board saying, look, we've got the water,
2 it's our water. We want to sell it to someone, and we
3 don't want to be put in a position of having to deal with
4 that.

5 MS. SCHNEIDER: So whether we were prudent or not,
6 we would have water in storage and then there's a term
7 that says we can't discharge it if the salinity of the
8 stored water exceeds ambient channel salinity. Is that
9 correct?

10 DR. DENTON: That is correct.

11 MS. SCHNEIDER: That, again, is essentially a
12 zero-change significance criterion, correct?

13 DR. DENTON: Yes, or an anti-degradation criteria.

14 MS. SCHNEIDER: Isn't it true that for this term as
15 well, Delta Wetlands could not discharge for export even
16 though the quality of Delta water when it reaches your
17 export facilities might not differ from your own export
18 water?

19 DR. DENTON: There would be a change. If -- if
20 Delta Wetlands was discharging at higher than ambient,
21 say, mathematically, or realistically there would be a
22 change. It's a question of how significant --

23 DR. GARTRELL: I'd like --

24 MS. SCHNEIDER: But it could be a very small
25 change --

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1 HEARING OFFICER STUBCHAER: Excuse me. Excuse me.

2 One at a time I think -- I think --

3 MS. SCHNEIDER: It would be a very small change at
4 times; isn't that correct?

5 DR. DENTON: Yes. We would have to look at the
6 significance of that change.

7 MS. SCHNEIDER: But if you were to have the Board
8 impose this term, you would be saying that the
9 significance of that change isn't the issue, it's the
10 actual difference, if any, between discharge water
11 salinity and channel water salinity.

12 DR. DENTON: But remember that there is a lot of
13 complexity in the flows within the Delta, and depending
14 on particular flows in the area that water may appear as
15 pure flood flow going directly to Contra Costa under
16 certain conditions.

17 MS. SCHNEIDER: Or it could mix?

18 DR. DENTON: Or it could mix, yes. And we can't --
19 the Board can't tell that in advance. And so it's very
20 difficult for the Board to allow some sort of dilution
21 credit, or say that the times that Delta Wetlands will be
22 discharging it's probably going to be lots of high flow.
23 And, therefore, there's no problem.

24 There will be times coming on when there are not
25 high flows. The only person diverting might be Contra

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1 Costa; the State pumps may be shut down because of
2 fisheries concern, or some other reason and that water
3 would go directly to Contra Costa with minimal dilution.

4 MS. SCHNEIDER: Fortunately for the projects that
5 doesn't occur that often, does it?

6 DR. DENTON: But when it does occur, there will be
7 a problem.

8 MR. MADDOW: Excuse me just a moment,
9 Mr. Stubchaer, and Ms. Schneider. Panel
10 cross-examination sometimes presents this issue: There
11 was a moment a few questions ago when Mr. Stubchaer
12 cautioned two of the Contra Costa witnesses to not speak
13 one on top of the other.

14 Dr. Gartrell had a statement he wished to make
15 in further elaboration in the answer that Dr. Denton gave
16 in answer of Ms. Schneider's question: How should we --

17 MS. SCHNEIDER: That's why there's redirect,
18 Mr. Stubchaer.

19 HEARING OFFICER STUBCHAER: Well, yes, but we do
20 have cross-examination by panels. And the general rule
21 has been whoever is on the panel is most capable of
22 answering the question can answer it.

23 I would say to the panelists: If you can signal
24 among yourselves that you want to have something to
25 follow on to one speaker, that might be one way to avoid

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1 the interference problem.

2 MR. MADDOW: And, Mr. Stubchaer, if I may be so
3 bold to think with the possible exception of
4 Mr. Darling and Mr. McCollum, all these people work in
5 the Department that Dr. Gartrell heads. And, perhaps,
6 for efficiency I'll kind of ask him to serve as the
7 quarterback among those water quality experts, if that's
8 acceptable to the Board?

9 HEARING OFFICER STUBCHAER: It's up to you.

10 MS. SCHNEIDER: Mr. Stubchaer, I can't actually see
11 Mr. Gartrell most of the time. So I apologize if I miss
12 him.

13 MR. MADDOW: Is that better?

14 MS. SCHNEIDER: I think it's the angle problem,
15 actually.

16 HEARING OFFICER STUBCHAER: You want to rotate the
17 lecture a little, then you'll see the back of his head.

18 MS. SCHNEIDER: I'll try to be more mindful.

19 HEARING OFFICER STUBCHAER: All right. Go ahead.
20 Mr. Gartrell, did you want to add to the answer to the
21 question?

22 DR. GARTRELL: Well, actually, I wanted to qualify
23 it by: The question referred to the District as -- the
24 District's exports. The District is a diverter within
25 the Delta and uses water within the Delta, or in the area

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1 immediately adjacent thereto, and is not an exporter.

2 HEARING OFFICER STUBCHAER: All right.

3 Ms. Schneider.

4 MS. SCHNEIDER: Thanks. The suggested limitation
5 on DW discharges because of salinity levels, that would
6 effectively limit Delta Wetlands to not discharge for
7 storage at times when quality for salinity at your -- at
8 your diversion locations is within the Water Quality
9 Control Plan, 150 milligrams per liter; isn't that
10 correct?

11 DR. DENTON: Yes.

12 MS. SCHNEIDER: So is it the District's position
13 that the Board's Water Quality Control Plan protections
14 for Contra Costa's diversions are inadequate?

15 DR. DENTON: I -- yes, I think that would be --
16 yes, in all due respect.

17 MS. SCHNEIDER: Have you looked at how many times
18 Delta Wetlands would be discharging water that has DOC
19 levels above ambient DOC levels?

20 DR. DENTON: No, I have not.

21 MS. SCHNEIDER: Have you looked at how many times
22 Delta Wetlands would be discharging water when its
23 salinity levels of stored water would be above ambient
24 salinity levels?

25 DR. DENTON: Yes, I did. And it caused me a great

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1 deal of concern.

2 MS. SCHNEIDER: Would you say that it's more than
3 half the time?

4 DR. DENTON: I think it would be much more.

5 MS. SCHNEIDER: So if this term were applied, Delta
6 Wetlands would not be able to discharge for export at
7 least more than half the time compared to what its
8 projections are now?

9 DR. DENTON: I think that's something that needs to
10 be -- I'll first premise going in that there needs to be
11 operating criteria for Delta Wetlands so that they do not
12 degrade water quality for urban agencies. If that --
13 those operations criteria were added to the fishery, what
14 would happen is that instead of filling in September and
15 October, it would be possible that Delta Wetlands would
16 have to wait an additional month until the water quality
17 was sufficiently good that they would be taking on very
18 high quality water.

19 And we've already heard from Delta Wetlands that
20 there will not be any build up of TOC on the islands. So
21 a good water quality is put on in terms of salinity and
22 TOC, then there shouldn't be a problem there when this
23 comes to discharging that water.

24 MS. SCHNEIDER: Shouldn't be a problem at the
25 discharge point compared to channel salinity or DOC, or a

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1 problem when it finally gets to the export or diversion
2 location?

3 DR. DENTON: There shouldn't be a problem in terms
4 of the discharge permit for the Delta Wetlands islands.

5 MS. SCHNEIDER: Well --

6 DR. DENTON: If you put on good quality water and
7 discharge it when the water quality is bad you would
8 always be below ambient conditions.

9 MS. SCHNEIDER: There's a concept in the water
10 quality world of having running annual averages. Do you
11 see any basis for importing the concept of running annual
12 averages into the DOC and salinity issues here, for
13 instance, if you're running annual average includes 12
14 months of data and 11 months show a benefit because of
15 foregone ag diversions and discharges, but one month of
16 some impact that that should not be taken into account?

17 DR. GARTRELL: No. We don't deliver average water
18 quality to our customers. We have to deliver what comes
19 into the Delta at that time. And the impacts have to be
20 measured against that. If there is an overall net
21 benefit to the project, that can be taken into account,
22 but what we are looking for is for no degradation of our
23 water quality.

24 It's not sufficient to have -- to say that,
25 well, on average our water quality is good. That's true.

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1 On average if we got average water quality for our
2 customers all the time we probably wouldn't need a Los
3 Vaqueros Project for water quality as one of the
4 important components. The fact of the matter is water
5 quality is variable in the Delta. It's highly degraded
6 at times so much so that we're building that project in
7 order to help smooth that out. We're not building that
8 project as a Delta Wetlands mitigation project. And
9 Delta Wetlands should mitigate its own impacts.

10 DR. DENTON: And if I may just state very briefly
11 that if Delta Wetlands as the operations study suggests
12 is only going to be discharging primarily in July and
13 August, then already you're talking about a two-month
14 time frame which should not then be averaged out over the
15 whole year. It would be during those two months that the
16 next -- some of the major impacts would be occurring from
17 the discharges.

18 MS. SCHNEIDER: Are you aware, Dr. Gartrell, of how
19 OP CERP discussions about make-up pumping that may occur
20 this fall to replace pumping reductions made this spring
21 for fish protection?

22 DR. GARTRELL: Yes.

23 MS. SCHNEIDER: Are you aware that one measure
24 being discussed would include a petition to the Board to
25 reduce the required Delta outflow from 4500 csf to 4,000

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1 csf in November to December?

2 DR. GARTRELL: That was discussed. And what -- the
3 current plan is, as I recall, has no changes in
4 reductions in -- in the requirements that we are working
5 on. We have worked very hard. There were -- previously
6 this summer there was discussions about reducing, or
7 relaxing ag standards and others and we have worked very
8 hard to avoid those.

9 MS. SCHNEIDER: If that action were taken, would
10 the result be to -- of removing the 500 csf from the
11 requirement resulting in about 50 milligrams chloride
12 increase at Contra Costa's intakes?

13 DR. GARTRELL: That's a possibility, yes. And that
14 would be one reason we would be very concerned.

15 MS. SCHNEIDER: And isn't that 50 or so,
16 approximately 20 percent of the standard at 250?

17 DR. GARTRELL: Mathematically I think that's about
18 right.

19 MS. SCHNEIDER: Well, it's interesting it just
20 happens to be the significance criteria used in the Draft
21 EIR/EIS; isn't that right?

22 DR. GARTRELL: Yes, but I fail to see the
23 relationship.

24 MS. SCHNEIDER: I thought you would. You have
25 testified that Delta Wetlands discharges could double

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1 your chloride levels. Isn't the maximum Delta Wetlands
2 impact under its final operations criteria on chloride
3 levels calculated by the G Model 26 milligrams per liter
4 chloride

5 DR. DENTON: Are you talking about diversions, or
6 discharges by Delta Wetlands?

7 MS. SCHNEIDER: Its operations, diversions and
8 discharges under the final operations criteria --

9 DR. BENTON: Right.

10 MS. SCHNEIDER: Isn't the maximum impact under your
11 own G Model 26 milligrams per liter?

12 DR. DENTON: That is one -- yes, we ran the G Model
13 and that was a calculation in our looking only at
14 seawater intrusion, not taking into account other things.

15 MS. SCHNEIDER: So, perhaps, saying that there
16 could be a doubling could be an overstatement?

17 DR. DENTON: Based on my Figure 1 in my testimony,
18 yes, for that particular scenario.

19 MS. SCHNEIDER: Dr. Gartrell, you testified about
20 the water rights positions of the District. Generally,
21 isn't it correct that Delta Wetlands, as a junior
22 appropriator, will be able to divert if its diversions
23 will not interfere with the District's prior water
24 rights?

25 DR. GARTRELL: Yes. That's the way we want the

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1 terms explicitly in there, to assure that.

2 MS. SCHNEIDER: And Delta Wetlands can only divert
3 if there is water available for diversion?

4 DR. GARTRELL: They should be limited to that,
5 that's right.

6 MS. SCHNEIDER: So in your testimony you're
7 asserting that Delta Wetlands will interfere with Contra
8 Costa's water rights if there is ever a time when Contra
9 Costa can't divert to storage and Delta Wetlands can
10 divert; is that correct?

11 DR. GARTRELL: No. I'm asserting that there could
12 be periods when the diversions by Delta Wetlands would
13 prevent CCWD from diverting.

14 MS. SCHNEIDER: Are you referring to your
15 reasonable and prudent measure in your Federal biological
16 opinion requiring that X2 be centered on Chipps Island
17 for a 14-day running average from February to May?

18 DR. GARTRELL: That is one term. And that was
19 incorporated in our -- our permit terms for the Los
20 Vaqueros permits, but there are other conditions as well.
21 For example, diverting in a way that would prevent CCWD,
22 or its customers from diverting out of San Joaquin River
23 by raising salinity to a point where the water is no
24 longer usable.

25 MS. SCHNEIDER: One of the concerns that I believe

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1 Contra Costa raised in its Los Vaqueros proceeding was
2 that it did not want an explicit term, and didn't receive
3 an explicit term related to that rpm in its biological
4 opinion as a term in its water right; isn't that the
5 case?

6 DR. GARTRELL: That's right. That's because that
7 term related solely to biological impacts on fisheries.
8 In this case, it's somewhat different. The Delta
9 Wetlands Project is relying on those terms and conditions
10 to make claims about the reduced water quality impacts.
11 Without -- without those terms and conditions in there,
12 there could be significant water quality impacts on the
13 District. ~* And if it's just incorporated by
14 itself as -- as a term in a biological opinion, which can
15 change; and if it does change the protections would be
16 removed. As a consequence, we need protections in the
17 permit to protect us explicitly against impacts in our
18 water quality.

19 MS. SCHNEIDER: But at the time you sought your Los
20 Vaqueros permits and changes, didn't you ask the Board to
21 include a term which generally requires compliance with
22 all legally binding provisions of your biological
23 opinions and not any explicit rpm term itself be
24 included?

25 DR. GARTRELL: That's right. And what we're asking

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1 for here is explicit terms with respect to water quality.

2 MS. SCHNEIDER: Didn't Mr. Bishop note just a few
3 minutes ago that the biological opinions change and the
4 Board is going to continually have to, what he called,
5 "re-sort the deck," end quote, of various permit terms if
6 these biological opinion rpm's are inserted in anybody's
7 terms and conditions under their permit?

8 DR. GARTRELL: That's right. And, again, that may
9 be appropriate for the terms related to protecting
10 biological species. But as I stated before, the reason
11 we need explicit terms is that those can change. The
12 protections that they might change incidentally, because
13 they limit the diversions. With respect to the water
14 quality impacts they're incidental. Those have to be
15 protected, as well, by explicit terms.

16 MS. SCHNEIDER: So if your biological opinion term
17 changed, you would want Delta Wetlands to come back in
18 and get a change in its water right terms?

19 DR. GARTRELL: I would assume that if our
20 biological opinion changed it would be for a significant
21 cause and it may -- it could possibly result in that,
22 yes.

23 MS. SCHNEIDER: Delta Wetlands is already subject
24 to quite a few of X2 limitations, that -- all of the ones
25 set forth in the Water Quality Plan and to various X2

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1 limits in its final operations criteria, and in its
2 Federal biological opinions.

3 Isn't it true, then, what you're talking about
4 is a problem that the Fish and Wildlife Service impose a
5 different X2 limitation more recently on Delta Wetlands
6 than the limitation it imposed on Contra Costa? But in
7 each case, isn't it true, that these X2 limitations were
8 what Fish and Wildlife wanted at the time to protect the
9 species issues?

10 DR. GARTRELL: That's true. We have different
11 terms. And they have different requirements. But what
12 we are seeking here is, in addition to that, a term that
13 Delta Wetlands not divert unless X2 is west of Chipps
14 Island to protect us with respect to water quality. That
15 term would cover both those cases.

16 MS. SCHNEIDER: Is it possible that the CCWD's
17 remedy here is to seek a change in its own biological
18 opinion to get rid of any parent inconsistency between
19 the two?

20 DR. GARTRELL: That's a possibility, but there's no
21 guarantee we would get that.

22 MS. SCHNEIDER: So it's -- what CCWD is asking the
23 Board to impose on the Delta Wetlands is an X2 term based
24 on actual, presumably, daily X2 calculation of 71
25 kilometers, that's three miles west of Chipps Island, not

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1 on a 14-day running average as your term provides, but
2 daily, at 71 kilometers; is that correct?

3 DR. GARTRELL: No. We haven't been specific on
4 that. And I think a 14-day running average would be
5 appropriate.

6 MS. SCHNEIDER: So let me make sure I heard you.
7 You would agree that a 14-day running average would fit
8 better with your 14-day running average X2 requirement in
9 your own opinion?

10 DR. GARTRELL: It would be an appropriate term,
11 yes.

12 MS. SCHNEIDER: Well, the difference between
13 Collinsville and -- which is at 81 kilometers; and the 71
14 kilometer measurement point that Contra Costa is
15 suggesting is 10 kilometers. And, isn't it true, that
16 that represents a flow of about 10,000 csf?

17 DR. DENTON: What does? The difference does or --

18 MS. SCHNEIDER: Well, to get X2 to 71 kilometers
19 doesn't it require about 17,000 csf?

20 DR. DENTON: Right.

21 MS. SCHNEIDER: And at 81 kilometers at
22 Collinsville that, generally, this number is 7,100 cubic
23 feet per second?

24 DR. BENTON: Right. If you use the Kimmerer
25 Monismith equation it's 6,900 csf, slightly, yes.

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1 MS. SCHNEIDER: So can we round that to 7 for
2 purposes --

3 DR. DENTON: Sure.

4 MS. SCHNEIDER: Thank you. So the difference
5 between keeping X2 at 71 kilometers versus Collinsville
6 at 81 kilometers is approximately -- approximately
7 represents a flow of 10,000 csf?

8 DR. DENTON: Yes. There would have to be a period
9 of high enough flow to move it up to that amount.

10 MS. SCHNEIDER: So is it correct that it's Contra
11 Costa's position that Delta Wetlands must forego any
12 portion of that 10,000 csf of additional water in favor
13 of Contra Costa's diversions?

14 DR. DENTON: Yes, to protect water quality in the
15 Delta for the urban water use.

16 MS. SCHNEIDER: Does Contra Costa assert that Delta
17 Wetlands's diversions of any portion of that 10,000
18 would, therefore, adversely affect Contra Costa's senior
19 water rights?

20 DR. GARTRELL: Yes, it could, or those of our
21 customers; City of Antioch would be in that container.

22 MS. SCHNEIDER: So it's Contra Costa's position
23 that Delta Wetlands must not divert quantities of water
24 that from all other perspectives might be available if it
25 is possible that Contra Costa might be affected by the X2

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1 limitations in your own biological opinions?

2 DR. GARTRELL: No. It's not just the X2
3 limitations in the biological opinion as I stated before.
4 It's to protect Delta users from the water quality
5 degradation resulting from the salinity intrusion from
6 the very large diversions that can take place from this
7 project with relatively low outflow.

8 MS. SCHNEIDER: Isn't it true, that when Delta
9 Wetlands is diverting X2 is almost always well west of
10 Chipps Island?

11 DR. GARTRELL: Yes. And I think that's exactly why
12 we believe that this is a reasonable term.

13 MS. SCHNEIDER: Have you calculated how many times
14 the Delta Wetlands Project would have caused X2 to move
15 inside of Chipps Island during February and March during
16 the seven-year record?

17 DR. DENTON: I think we did look at that. I think
18 there might be one or two times. Part of that is because
19 most of the filling -- the major filling goes on before
20 the February to March period. However, the Department of
21 Fish and Game, or any other permit terms that are imposed
22 on Delta Wetlands, the initial filling of the Delta
23 Wetlands Project could well be delayed and shift from an
24 October/November period into a February and March period.
25 And that's what we're concerned about.

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1 MS. SCHNEIDER: But you are aware that Delta
2 Wetlands has to be within the requirements of the Water
3 Quality Control Plan for X2 locations at Chipps or Port
4 Chicago, correct?

5 DR. DENTON: Certainly.

6 MS. SCHNEIDER: So isn't it true, that the Water
7 Quality Control Plan itself requires the X2 to be at
8 Chipps or further west almost every February and March?

9 DR. DENTON: For portions of February and March.
10 There could be ten days, for instance, at the beginning
11 of February then the X2 requirement would be met, in
12 which case there would then be surface flow available for
13 people.

14 MS. SCHNEIDER: So if Delta Wetlands's diversions
15 caused X2 to shift, say, a half a kilometer to the east
16 from 71 kilometers from Chipps Island, would Contra Costa
17 still demand that Delta Wetlands not divert unless X2 is
18 west of kilometer 71?

19 DR. DENTON: If a number is decided upon, if the
20 Board decides upon that, then that would be the operating
21 criteria in which Delta Wetlands would have to then
22 operate.

23 MS. SCHNEIDER: Thank you. I have finished my
24 questions and Ms. Brenner has a few more for, primarily,
25 Dr. Denton.

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1 HEARING OFFICER STUBCHAER: All right.

2 MS. SCHNEIDER: Thank you.

3 ----oOo----

4 CROSS-EXAMINATION OF CONTRA COSTA WATER DISTRICT

5 BY DELTA WETLANDS PROJECT

6 BY BARBARA BRENNER

7 MS. BRENNER: Good morning, Dr. Denton. I have a
8 couple different questions and it might seem a little bit
9 jumpy, but I'll try to keep them all in some sort of
10 order.

11 You didn't mention any type of DOC loading that
12 you specifically testified to, or brought forward in your
13 written, or oral direct testimony. And I'm just
14 wondering whether you're relying on CUWA's testimony for
15 your position that there will be a high DOC level in
16 Delta Wetlands discharges.

17 DR. DENTON: Primarily, yes.

18 MS. BRENNER: So you agree with their analysis of
19 the Delta Wetlands Project?

20 DR. DENTON: Certainly, yes. And we -- members of
21 Contra Costa Water District, because Contra Costa is a
22 member of the California Urban Water Agencies, did
23 contribute to the development of CUWA's testimony.

24 MS. BRENNER: Okay. You testified that CCWD is
25 converting to ozonation, or chloramination treatment; is

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1 that true?

2 DR. DENTON: I didn't testify today, but it is in
3 my written testimony.

4 MS. BRENNER: Okay. Today's testimony and your
5 written testimony goes to your total testimony, right?

6 DR. DENTON: Right.

7 HEARING OFFICER STUBCHAER: Ms. Brenner, I believe
8 another witness mentioned chloramination.

9 MS. BRENNER: Today, but Dr. Denton has it in his
10 written testimony, also. If that's the case -- I mean it
11 doesn't matter to me who answers.

12 MR. McCOLLUM: Just to elaborate, we're not
13 converting to chloramination. We've been using
14 chloramination for several years now. And we've been
15 using ozonation at our Anna Bolt facility since it was
16 constructed several years ago. We're in the process of
17 converting to using intermediate ozonation at our Boleman
18 treatment plant.

19 MS. BRENNER: Okay.

20 DR. GARTRELL: And by way of elaboration, we also
21 serve the cities of Pittsburg and Antioch and the Bay
22 Point -- or the community of Bay Point, all of which have
23 their own treatment plants, none of which are ozone, and
24 the City of Martinez.

25 MS. BRENNER: Given the use of ozone, wouldn't you

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1 say that bromides are more important and more of a
2 concern than CCWD than DOC, or TOC levels?

3 MR. McCOLLUM: Without giving specific weight to
4 one or the other, we're concerned with all aspects. All
5 these things need to be taken into account, because this
6 is trying to strike a balance between the DBP production
7 and the microbial risk. It's a part of the rig-nig
8 process that has led to the Stage I/Stage II regulations.
9 The ICR, it's wrestling with this balance between this
10 DBP production and microbial risk.

11 So all these things must be taken into account
12 together; the TOC, DOC increases lead to DBP concerns as
13 well as increasing the disinfectant demands, which then
14 requires increases in use of your disinfectants in order
15 to meet the CT, which is a factor of concentration and
16 time for the disinfectant in order to meet the microbial
17 regulations that are imposed specifically for Giardia.
18 So these things are balanced. And it's really difficult
19 to take one separate from the other. They need to be
20 taken in context with all of them.

21 MS. BRENNER: So bromides are as important, or --
22 at least equally as important as DOC?

23 MR. McCOLLUM: We are concerned with bromide as it
24 relates to bromate production with the ozonation process,
25 certainly.

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1 MS. BRENNER: All right. Dr. Denton, you indicated
2 that your greatest concern with Delta Wetlands occurred
3 with your example of Delta Wetlands reducing DO -- the
4 Delta outflow from 9 to 71. And that was in November of
5 1926.

6 DR. DENTON: That was when I looked at the results
7 on Figure 1 and looked at when the largest impacts
8 occurred. They were all related to -- actually, end up
9 being in that particular month -- in a particular month
10 and a previous month, because of the lag affect between
11 outflow and the impact that occurs at Rock Slough. But
12 either in the existing month, or previous month there
13 was -- the highest impacts occurred when there was change
14 down to 7,100 csf.

15 MS. BRENNER: And that -- you used the sample of
16 November of 1926, right?

17 DR. DENTON: I used that example because those were
18 data that were generated with the Fischer Model with the
19 corrections that Dr. List incorporated. So they were the
20 most up-to-date illustration I could use for showing the
21 impacts of some of the intrusion at our intake.

22 MS. BRENNER: In November isn't it true that CCWD
23 diversions are unrestricted, that is CCWD itself is not
24 limited by their biological opinion, X2 reasonable
25 prudent measures?

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1 DR. DENTON: If you're referring to the Los
2 Vaqueros Project, you need to remember that we can direct
3 divert basically at any time except, perhaps, in April.

4 MS. BRENNER: Okay. But the Los Vaqueros
5 provisions are not limited in this particular month by
6 the X2?

7 DR. GARTRELL: Which one?

8 DR. DENTON: November.

9 DR. GARTRELL: November; that's correct.

10 MS. BRENNER: That's correct, right?

11 DR. GARTRELL: Right.

12 MS. BRENNER: Can we look at Delta Wetlands's
13 Exhibit 4, Table 2A. If we look at November of 1926,
14 doesn't it show that Delta Wetlands does not divert
15 during that time?

16 DR. DENTON: This a calendar year --

17 DR. GARTRELL: Yes, November 1926 is shown on the
18 chart here as November 1927. There is a water year.
19 Dr. Denton's testimony referred to a calendar year.

20 DR. DENTON: Yes. There's a tendency in our
21 circles to do everything in water years. And this
22 graphic is in a water-year basis.

23 MS. BRENNER: Right.

24 DR. DENTON: But the blot I put up was a calendar
25 year plot. So the dates were a calendar year. The 2298

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1 there on the water year 1927 was the one I was referring
2 to.

3 MS. BRENNER: Okay. So you're -- you're -- that's
4 the discrepancy then.

5 DR. DENTON: It took me a while to sort through
6 that as well, yeah.

7 MS. BRENNER: Okay. Thank you. You can go ahead
8 and take that down, Patty. You used the G Model, Figure
9 1, to suggest that Delta Wetlands's diversions always
10 degrade water quality at Rock Slough, correct?

11 DR. DENTON: The impact of purely the seawater
12 intrusion as simulated by the G Model would indicate that
13 any time you reduce Delta outflow there would be an
14 impact at Rock Slough. And I was trying to look at that
15 impact.

16 MS. BRENNER: So the G Model only reduces Delta
17 outflow by the amount of Delta Wetlands's diversions and
18 does not adjust for anything other than that outflow?

19 DR. DENTON: There was -- it's an interesting point
20 that I didn't raise that there is an adjustment in there
21 where, as a result of the tax, I guess, on Delta Wetlands
22 discharges, there was the ten-percent tax that was in the
23 modeling studies. So included in that figure are periods
24 of time when there is a slight increase in Delta outflow.
25 But they turned out, curiously enough, a period of time

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1 where you can't see -- at least you can't see on that
2 graph any improvement as a result of those releases. So
3 all I did was take the pure outflows coming out of the
4 DeltaSOS Model and put it into a salinity intrusion
5 model.

6 MS. BRENNER: It's a limited looked at the --

7 DR. DENTON: Certainly. There are situations --

8 MS. BRENNER: Okay.

9 DR. DENTON: -- where agricultural drainage could
10 be superimposed on that and make things even worse.

11 MS. BRENNER: This isn't something you need to look
12 at a model for, is it? I mean isn't increasing
13 diversions allowable to reduce outflow?

14 DR. DENTON: Certainly. But we need to know what
15 the magnitude is. We can't just wave our hand.

16 MS. BRENNER: But this isn't going to tell you the
17 entire magnitude of the Delta Wetlands Project. You need
18 to look at other aspects --

19 DR. DENTON: Certainly. That's why I thought it
20 was appropriate to put up Figure 20 from the Delta
21 Wetlands's Exhibits to show the results of a more
22 complete model that included all of the other factors
23 that involved agricultural drainage.

24 MS. BRENNER: Okay. So you recognized the G Model
25 is very limited in its purposes?

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1 DR. DENTON: Yes. Just looking at the seawater
2 intrusion effect.

3 MS. BRENNER: Doesn't the Fischer Delta Model
4 produce a more comprehensive picture that includes timing
5 of diversions and discharges, the effects of foregone ag,
6 and the elimination of drainage discharges, as well as
7 what the G Model looks at?

8 DR. DENTON: Yes, certainly, if it was used
9 correctly and the outflows were counted.

10 MS. BRENNER: That's the intent of the Fischer
11 Delta Model, isn't it?

12 DR. DENTON: Yes.

13 MS. BRENNER: Okay. And you and Dr. Shum have both
14 worked extensively on the Fischer Delta Model for
15 calibrating it and standardizing it?

16 DR. DENTON: Dr. Shum and Dr. Gartrell have had
17 most experience in it.

18 MS. BRENNER: Calibrating included, correct?

19 DR. GARTRELL: Yes.

20 MS. BRENNER: And you have also worked on the
21 Fischer Delta Model to the extent of determining, or
22 adjusting it for agricultural returns?

23 DR. GARTRELL: Yes.

24 MS. BRENNER: Okay. So you've made those
25 adjustments, or fine tuned the Fischer Delta Model for

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1 agriculture returns prior to the Delta Wetlands Project,
2 haven't you?

3 DR. GARTRELL: I wouldn't characterize it as fine
4 tuning. As I've testified before before this Board and
5 documented elsewhere, the agricultural returns in the
6 Delta models are crude and cover gross sort of
7 approximations. So it's not a fine tune, no.

8 MS. BRENNER: Isn't that true with any model?

9 DR. GARTRELL: Yes. The agricultural returns in
10 the Delta are poorly measured and not well understood,
11 and very difficult to model. In part, because they are a
12 result of farming practices, and engineers aren't very
13 good at modeling farmers.

14 MS. BRENNER: But the Fischer Delta Model,
15 certainly, is the -- in your mind wouldn't it be the most
16 accurate depiction of the Delta and the ag returns? Is
17 there a different -- I mean --

18 DR. GARTRELL: Well, there are other depictions.
19 For example, I think the Department of Water Resources
20 has done some work in refining the agricultural returns
21 more than we have in the Fischer Model. It still has the
22 limitations with respect to the source data that go in
23 that.

24 MS. BRENNER: And what is -- what are you
25 referencing there?

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1 DR. GARTRELL: The current -- I think it's
2 currently referred to as DSM I, Department of Water
3 Resources Delta Salinity Model, has -- in some versions
4 has attempted to put in models essentially on an
5 island-by-island basis.

6 MS. BRENNER: But it has its downfalls, too?

7 DR. GARTRELL: Yeah, there's still limitation on
8 the source data.

9 MS. BRENNER: When you take a look at a project,
10 isn't it customary to take the models and do these types
11 of averaging in order to get a picture of what is going
12 to occur?

13 DR. GARTRELL: Yes. And the important thing there
14 is to take into account the level of accuracy --

15 MS. BRENNER: Uh-huh.

16 DR. GARTRELL: -- with respect to the assumptions
17 that have gone into it and work with those.

18 MS. BRENNER: And you've worked with the Fischer
19 Delta Model quite -- aren't you normally quite satisfied
20 with what it does?

21 DR. GARTRELL: In terms of salinity intrusion, yes.
22 But we've always qualified any results we had with
23 respect to agricultural drainage. We identify either
24 improvements or impacts; we take care to qualify those.

25 MS. BRENNER: Wasn't, Dr. Denton, your

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1 recommendation to use the Fischer Delta Model based on
2 your view that the Fischer Delta Model is the best
3 available model to analyze the impact of Delta Wetlands
4 on CCWD's delivered water quality at the Los Vaqueros
5 Project in place?

6 DR. DENTON: Certainly.

7 DR. GARTRELL: And I would add that some of those
8 comments are in our Exhibit 5. Our concern was with the
9 RMA Model that had been used, and the calibration of that
10 appeared in many years to be quite inconsistent with
11 measurements.

12 MS. BRENNER: You still requested that the Fischer
13 Model be used in this instance?

14 DR. GARTRELL: That's right.

15 MS. BRENNER: Okay. And you have assisted in the
16 calibration and the fine tuning. I will continue to use,
17 or fine tune the Fischer Delta Model with regard to ag
18 return, both prior to the Delta Wetlands Project being
19 looked at, and while the project was being looked at?

20 DR. GARTRELL: I'm not aware of any information, or
21 requests for assistance from us from anyone on the ag
22 return portion of that while that work was being done,
23 no. My work on that portion was done a number of years
24 ago in the calibration and clarification of the model.

25 MS. BRENNER: So, CCWD didn't ever raise any

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1 questions with regard to the use of Fischer Delta Model
2 and ag return?

3 DR. GARTRELL: When we received the results we knew
4 it was quite apparent that there was a problem with the
5 model. A number of those errors have already been
6 identified and testified to. It wasn't until we got
7 later results when we recognized that there had been
8 additional errors.

9 MS. BRENNER: Did you review the various model
10 analyses used by Jones and Stokes, including use of the
11 RMA Model for the EIR?

12 DR. GARTRELL: Yes, we did..

13 MS. BRENNER: Wasn't it your view that the models
14 used by Jones and Stokes, including use of the RMA Model
15 output, did not adequately analyze possible Delta
16 Wetlands's affects on Los Vaqueros water quality?

17 DR. GARTRELL: That's right.

18 MS. BRENNER: You, therefore, suggested to Delta
19 Wetlands that it have a Fischer Delta Model run to
20 analyze the impacts of Delta Wetlands on Los Vaqueros
21 water quality, correct?

22 DR. GARTRELL: That's correct.

23 MS. BRENNER: Okay. And didn't you make CCWD's Los
24 Vaqueros modular, or node available to Flow Science to
25 use in its analysis of Delta Wetlands affects on Los

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1 Vaqueros water quality?

2 DR. DENTON: Yes, we did.

3 MS. BRENNER: You provided that information to Flow
4 Science, correct?

5 DR. DENTON: We provided the modular that fits into
6 the Fischer Model, correct. We provided our information
7 like input files, but we also included a suggestion that
8 they needed to be looked at. Some of the input
9 apparently needed to be checked, because if you operate
10 the Delta differently than the times when the Los
11 Vaqueros Project would fill, our discharge would change
12 because the Delta conditions would change.

13 MS. BRENNER: And following your suggestions
14 didn't CCWD staff, including yourself, Dr. Shum, David
15 Briggs, communicate directly with Flow Science to
16 coordinate the use of Fischer Delta Model to analyze
17 Delta Wetlands affects on Los Vaqueros?

18 DR. DENTON: Yes, we did.

19 MS. BRENNER: And did Flow Science provide a draft
20 of its report to you to review before it was finalized?

21 DR. DENTON: Yes, they did.

22 MS. BRENNER: And CCWD staff met with Flow Science
23 staff and Delta Wetlands representatives on both
24 April 8th and April 24th to discuss this draft report.
25 And the analysis that it included on Delta Wetlands

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1 affects on Los Vaqueros water quality?

2 DR. DENTON: Yes, we did.

3 MS. BRENNER: And isn't it true that in those
4 meetings and other correspondence and conversations
5 related to Flow Science's analysis using the Fischer
6 Delta Model that CCWD staff did not question the use of
7 the Fischer Delta Model to do the analysis of Delta
8 Wetlands affects on Los Vaqueros water quality?

9 DR. DENTON: That is true. The only thing we
10 questioned were the results coming out of that model.

11 MS. BRENNER: And you never raised issues regarding
12 how the ag diversions or discharges were handled by the
13 Fischer Delta Model?

14 DR. DENTON: Certainly. We received a great deal
15 of information. We had to analyze that information and
16 it took a great deal of time. And at the same time we
17 were, of course, preparing our testimony.

18 DR. GARTRELL: And --

19 MS. BRENNER: But you never raised any issue with
20 regard to how the Fischer Delta Model models the ag
21 diversions and discharges?

22 DR. GARTRELL: Yes, we did. We raised those in our
23 Exhibit 5, which were our comments on the -- on the Delta
24 Wetlands Environmental Documentation.

25 MS. BRENNER: Right.

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1 DR. GARTRELL: And what you are driving at here is
2 the error that I discussed in my testimony related not to
3 remodeling the Delta Wetlands Project within the
4 operations studies.

5 The error there was not with respect to the
6 Fischer Model, or the use of the model. It was with
7 respect to the data going into the model. And those are
8 the responsibility of Delta Wetlands, as is the model
9 used to analyze that.

10 MS. BRENNER: You reviewed the data that was going
11 into the model and you never raised these objections --

12 DR. GARTRELL: No, we did not.

13 HEARING OFFICER STUBCHAER: Wait a minute. Wait a
14 minute. One at a time. Were you asking a question? I
15 wasn't sure if you were asking a question.

16 MS. BRENNER: I'm sure I could put it into question
17 form.

18 HEARING OFFICER STUBCHAER: You were going to say:
19 Didn't you or something like that, weren't you?

20 MS. BRENNER: Yeah.

21 DR. DENTON: I would say in response that we -- I
22 guess what we didn't receive, unfortunately, was enough
23 data. If we had received, for instance, the computed or
24 resulting Delta outflows from the Fischer Model we would
25 have been able to see straightaway that there were

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1 changes when there shouldn't have been changes in Delta
2 outflow, and would have been able to pick up on that.

3 But, unfortunately, the Delta -- the Fischer
4 Delta Model takes inflows and exports from the Delta as
5 part of the cal -- of the input. And then within the
6 black box of the computer it generates Delta outflows.
7 And if we don't see the Delta outflows, it's not
8 immediately obvious, for instance, that there was a
9 mistake in the export file on the Delta Wetlands Project
10 that was causing all of this excess outflow.

11 It's not obvious. In a sense it was obvious
12 that there was a problem with the salinity results, but
13 we were looking for other reasons for that to have been
14 occurring. And we weren't looking at the fact that there
15 was a mistake in the input to the Fischer Model by Delta
16 Wetlands which resulted in a mistake in the outflow from
17 the Delta calculated by the Fischer Delta Model.

18 MS. BRENNER: Well, I'm not talking about the
19 inflow/outflow. I recognize that you've raised the issue
20 that Fischer Delta Model doesn't properly look at the
21 outflow, what happens to the foregone ag diversions with
22 outflow.

23 But you've also raised issues as to how the flow
24 rates and the concentration -- and Dr. Shum has indicated
25 that, in fact, one only needs to look at concentration

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1 and not flow. So going beyond just your outflow issue,
2 and I'm saying: You've raised a couple issues with
3 regard to how the Fischer Delta Model deals with ag
4 diversions and discharges.

5 Those issues have been there. You each -- both
6 Dr. Shum and Dr. Gartrell are quite familiar with the
7 Fischer Delta Model, quite familiar with the way it
8 treats ag diversions and discharges. This issue with
9 regard to flows, concentrations, outflow was never raised
10 prior to the hearing of this -- of this project, correct?

11 DR. DENTON: I would -- I would say that our focus
12 was on seawater intrusion. And that -- as Dr. Gartrell
13 has just testified to this previously, that our focus is
14 on looking at seawater intrusion affects with the
15 superimposed affect of agricultural drainage.

16 In terms of the operation of the Fischer Model,
17 we have agricultural drainage in there to make sure that
18 we correctly model -- or to the best ability modeled, in
19 general, agricultural affects in the Delta. But when you
20 start getting down to the level of individual islands,
21 individual discharges from an island, then as
22 Dr. Gartrell said, it's not appropriate to be using the
23 Fischer Model on that level of detail unless you quantify
24 the answer.

25 DR. GARTRELL: And I'd like to add that I think

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1 what you're driving at could best be answered by our
2 issue in terms of the agricultural drainage, is the
3 interpretation of the results. And that's what I
4 testified to earlier. We're always very careful when
5 looking at the agricultural drainage to qualify that.

6 And in the information that we have, the way it
7 was done is -- is clearly -- even the model itself is
8 crude in that respect. The way it was modeled by the
9 consultants was also crude. And the conclusions being
10 drawn from that have to be qualified. And what I think
11 the testimony from CUWA and ours is that there are other
12 data on that that could -- could enlighten, if you will,
13 the crudeness of the modeling on that and how it's being
14 interpreted by Delta Wetlands.

15 MS. BRENNER: Are you indicating, Dr. Gartrell,
16 that the flow rates -- are you referencing the flow rates
17 when you say that?

18 DR. GARTRELL: No. I'm referencing the salinities
19 that were assumed to be foregone on the islands, which,
20 it's the salinity concentration that will have the
21 impact. If you have very low salinities and very high
22 flow rates you have a high mass discharge. But as in our
23 cross-examination earlier, I think it's quite clear you
24 can have -- if those flow rates are low enough and below
25 ambient there's no problem.

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1 MS. BRENNER: Do you agree with Dr. Shum it's only
2 the concentration at issue and not the flow?

3 DR. GARTRELL: In terms of the discharge, yes, it's
4 the concentration. If the concentration is below the
5 ambient then it's not going to increase the ambient
6 levels.

7 MS. BRENNER: Are the flows important in this
8 scenario, or in this analysis, or only concentrations?

9 DR. GARTRELL: In an analysis looking at the
10 salinity levels it's the concentration that's the more
11 important parameter.

12 MS. BRENNER: You didn't answer the question,
13 Dr. Gartrell. Are flows important or not?

14 DR. GARTRELL: Flows can be important if the
15 concentration is very high. The higher the flow the
16 worse the impact.

17 MS. BRENNER: So you have to look at both
18 parameters, correct?

19 DR. GARTRELL: You do need to look at both, that's
20 correct.

21 MS. BRENNER: Okay.

22 DR. DENTON: Could I add something here? I don't
23 see that this is an attack on anything that Flow Science
24 did. I think using the model that's available they
25 did -- they did the calculations that were required using

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1 what was available to them. The question is the other
2 thing that needs to be brought in mind here, and that we
3 were highlighting it, that there is this uncertainty in
4 the results, not because of the mistakes that the
5 consultant was making, but just because the Fischer Model
6 is crude.

7 So when there is this balance going on between
8 the degradation that could occur because of the
9 operations of the Delta Wetlands Project and it's being
10 balanced against the benefits of -- a changing
11 agricultural operation, there's a great deal of
12 uncertainty as to the relative magnitudes of those two
13 amounts. And so it's difficult for the Board to make a
14 decision based on the magnitude that's been coming out of
15 the Fischer Model of the agricultural -- the reduction
16 and degradation, or improvements as a result of changing
17 agricultural operation.

18 MS. BRENNER: And that's true with many models,
19 correct?

20 DR. DENTON: Definitely.

21 MS. BRENNER: Okay. And often times, or on a
22 regular basis, projects are analyzed with models that are
23 crude?

24 DR. DENTON: Unfortunately so.

25 MS. BRENNER: Yeah. Okay. And isn't it true

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1 that --

2 DR. GARTRELL: Particularly farmers.

3 MS. BRENNER: Farmers do the best they can.

4 DR. GARTRELL: No, modeling.

5 MS. BRENNER: Is it fair to characterize your
6 opinion that the modeling used for the EIR by Jones and
7 Stokes did not adequately assess the Wetlands affects on
8 Los Vaqueros?

9 DR. DENTON: Yes.

10 MS. BRENNER: And that you have the same view as to
11 the RMA Model?

12 DR. DENTON: Yes.

13 MS. BRENNER: The G Model?

14 DR. DENTON: Sorry, the G --

15 MS. BRENNER: Same view with regard to the G Model?

16 DR. DENTON: Is that two questions, or a follow-up
17 question?

18 MS. BRENNER: Are you not happy with what the
19 G Model can predict either?

20 DR. DENTON: Yes. The only thing that we would be
21 concerned about with the G Model is that there are
22 agricultural flows coming off Delta islands which cause
23 salinity degradations. There's also flows coming in from
24 the San Joaquin River. And so if you're trying to model
25 only using the G Model, what you'll find is that you're

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1 only looking at seawater intrusion, whereas somebody's
2 operation, not necessarily Delta Wetlands, could cause
3 the State, or the CVP pumps to change what they're doing,
4 either to pump more or less which will change the amount
5 of San Joaquin drainage that's been taken out of the
6 Delta. And that could cause an impact of the Delta -- of
7 the District's intakes as well. So all those things
8 taken into account.

9 MS. BRENNER: So the G Model isn't adequate. The
10 Fischer Delta Model is not adequate. The RMA Model is
11 not adequate. We don't have an adequate model.

12 DR. DENTON: I think we have an adequate model on a
13 Delta-wide basis, but when you get down to fine tuning
14 operations on Bacon island alone, that's when you get
15 into a problem.

16 MS. BRENNER: You focus on Bacon Island because its
17 got an unusual flow rate?

18 DR. DENTON: No. It was just the one I heard
19 mentioned last.

20 MS. BRENNER: Okay. Isn't it true, taking all
21 those things into consideration, and whether you agree
22 with the results of these models or not, that all these
23 models have ended up with essentially the same result and
24 that is that Delta Wetlands will have a slight although
25 beneficial affect of water quality of water coming out of

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1 the Delta on an annual average basis?

2 DR. DENTON: Definitely not.

3 MS. BRENNER: The models don't show that? The
4 model results are not consistent?

5 DR. DENTON: We pointed out we have concerns with
6 the modeling run.

7 DR. GARTRELL: No. I think it's --

8 MS. BRENNER: Let's back up to the question. Okay?

9 DR. GARTRELL: Right, and then repeat it.

10 MS. BRENNER: I'd be happy to. Isn't it true
11 whether you agree with the results or not, okay, that all
12 of these models have ended up with essentially the same
13 result and that is: The Delta Wetlands Project will have
14 a slight net benefit to water quality on an annual
15 average basis?

16 DR. GARTRELL: Are you including the G Model in
17 there?

18 MS. BRENNER: Yeah, you can include the G Model in
19 that.

20 DR. DENTON: I would repeat: Definitely not. My
21 testimony is saying that the results that are coming out
22 of the benefits are due to this bias in the results that
23 was due to the fact that there was assumed to be
24 additional Delta outflow in the Delta Wetlands case.

25 MS. BRENNER: I'm saying: Do you agree with the

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1 results or not? You've got to take that assumption into
2 the question. That's okay. I understand what your
3 response is.

4 DR. DENTON: Yes. The G Model in Figure 1 does
5 show that there is either no change or a degradation.
6 And so the average of that would be a net degradation.

7 MS. BRENNER: That's your G Model run, right?

8 DR. DENTON: Certainly, Figure 1 in CCWD Exhibit 4.

9 MS. BRENNER: Let's move on to the ag diversions.
10 Isn't it true that the ultimate fate of the foregone ag
11 diversion water actually depends on whether the Delta is
12 in control or not, and whether Delta outflow or the
13 export-to-inflow ratio is controlling if the Delta is in
14 balance?

15 DR. DENTON: I think that would be a fair
16 statement. However, there's also -- depends on what the
17 State and Federal Projects do. They are also controlling
18 what the Delta outflows are at that time.

19 MS. BRENNER: And you think the State or Federal
20 Projects will adjust their outflow depending on Delta
21 Wetlands diversions?

22 DR. DENTON: No. They'll meet standards.

23 MS. BRENNER: Right.

24 DR. DENTON: Which has the same effect, but they
25 would not be keeping track of whether Delta Wetlands

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1 changed from agricultural operations to water storage
2 operations five years ago.

3 MS. BRENNER: No. They wouldn't keep track of
4 that, correct?

5 DR. DENTON: No.

6 MS. BRENNER: Okay.

7 HEARING OFFICER STUBCHAER: Well, if that question
8 was -- that "no" could be taken either way.

9 DR. BENTON: I'm sorry.

10 MS. BRENNER: They would not keep track?

11 DR. DENTON: They would not keep track.

12 MS. BRENNER: I think we're in agreement there.

13 DR. GARTRELL: Well, too -- there was a
14 qualification there. As I testified earlier the -- in
15 the Water Quality Control Plan, the net Delta outflow is
16 defined as: The sum of the inflows less consumptive use
17 and depletions.

18 And the -- in the footnote 11 and 23 for Table 3
19 of the 1995 Water Quality Control Plan the -- and
20 footnote two to that footnote states that the Delta --

21 THE COURT REPORTER: I'm sorry.

22 DR. GARTRELL: The Department of Water Resources --
23 the DWR is currently developing new channel depletion
24 estimates. If these new estimates are not available
25 based on channel depletion, estimates shall be used --

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1 HEARING OFFICER STUBCHAER: You have to slow down a
2 little bit for the Court Reporter.

3 DR. GARTRELL: Okay. The gross channel depletion
4 for the previous day is based on the water type using DWR
5 latest Delta Wetlands study.

6 That was inserted explicitly in the ag urban
7 proposal. And ultimately incorporated with the Water
8 Quality Control Plan because it was a recognition that
9 the channel depletions that had been used in the past
10 were inadequate. And the purpose for that is have the
11 channel depletions updated when there is a change, or
12 when there is a known change.

13 Consequently, if this project were to go forward
14 the channel depletions would be updated; the presumed
15 diversions that are going onto ag right now would be
16 changed. And the projects would operate to the same
17 outflow and the outflow levels would not change under
18 balanced conditions.

19 MS. BRENNER: And you're sure of that?

20 DR. GARTRELL: Yes. As the ag urban representative
21 on the CAL/FED OPS Group, and one of people that is
22 responsible for implementing the Accord, it would be
23 changed.

24 MS. BRENNER: But not solely based on a Delta
25 Wetlands Project?

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1 DR. GARTRELL: It would be based on any known
2 changes in depletions.

3 MS. BRENNER: I'm sorry. I was getting
4 instructions. Could you tell me what you were reading
5 from?

6 DR. GARTRELL: It was the footnote -- I think it
7 was 11 and 20 -- it was actually -- it's footnotes 11 and
8 23 for Table 3 of the 1995 Water Quality Control Plan.

9 MS. BRENNER: Okay. Isn't it true, Dr. Denton,
10 that salinity at Old River is a combination of river
11 inflows, seawater intrusion, and ag drainage discharges?

12 DR. DENTON: Yes, because it's far away from the
13 ocean, or further away from the ocean water, sea water.

14 MS. BRENNER: There is possible improvements in
15 water quality whether outflow is -- is eliminated, or
16 when ag drainage is reduced, isn't there?

17 DR. DENTON: I'm sorry. Could you repeat the
18 question?

19 MS. BRENNER: There's possible improvements in
20 water quality whether outflow is inward, or when ag
21 drainage is reduced; isn't there?

22 DR. DENTON: There could be changes, yeah, under
23 those conditions.

24 MS. BRENNER: If some reduced ag drainage is pumped
25 and does not increase outflow, the reduced ag drainage

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1 would still provide a water quality benefit, wouldn't it?

2 DR. DENTON: If there is a reduction in the ag
3 drainage in the Delta, that would provide a benefit. And
4 that's one of the things that CAL/FED noted.

5 MS. BRENNER: So the elimination of ag drainage
6 would be helpful?

7 DR. DENTON: Yes. Dr. Shum just pointed out if
8 there was a situation where there was ag drainage but it
9 was of -- if it was of lower than ambient salinity you
10 would end up losing that benefit in terms of salinity.

11 MS. BRENNER: And do you think that ag drainage is
12 normally lower than the ambient?

13 DR. DENTON: No.

14 MS. BRENNER: Just checking.

15 HEARING OFFICER STUBCHAER: Ms. Brenner, how much
16 more do you have?

17 MS. BRENNER: Just a couple questions. I'm just
18 about done.

19 You indicated and we looked at the difference
20 between the water year and the regular year, but I want
21 to go back to this idea that significant impacts occur
22 when there's 9,000 csf reduced to it from, what, 9500 to
23 7300. That's when you have a significant impact?

24 DR. DENTON: In the particular example that you
25 were talking about before November 26, the diversion was

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1 3,000.

2 MS. BRENNER: Okay.

3 DR. DENTON: For Delta Wetlands it was 12,000
4 outflow. And that was reduced down to 9,000 csf. So
5 it's a slightly different situation.

6 MS. BRENNER: But you indicated during your
7 testimony there was significant impact on its -- not at
8 9,000, but when reduced outflow -- and I'm just reading
9 off my notes, outflow from 9500 down to 7300?

10 DR. DENTON: Yes. I think the key there is the
11 end -- if the final Delta outflow, or if the outflow is
12 reduced down to a very low number.

13 MS. BRENNER: Uh-huh.

14 DR. DENTON: -- not the magnitude of that
15 reduction.

16 MS. BRENNER: And how often does that occur; do you
17 know?

18 DR. DENTON: A number of times in the operations
19 center. I don't know exactly out of the 840 months.

20 MS. BRENNER: Less than five? More than five?

21 DR. DENTON: Well, you can see from that plot,
22 there are a large number of points that are above that
23 line, that could be above the line.

24 MS. BRENNER: Are you saying that each one of those
25 plots above the line is corresponding to this type of

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1 scenario?

2 DR. DENTON: That was tending to be the case. And
3 most of those significant changes is when the Delta
4 outflow was reduced down to 7,000.

5 MS. BRENNER: But that plot doesn't show
6 significant changes above the line each time. So I'm
7 trying to narrow the field down to when you're going to
8 have a significant change --

9 DR. DENTON: Right. My point in bringing that up
10 was just saying that it's not just when Delta Wetlands is
11 diverting at the highest diversions that cause the
12 impacts. The more significant ones relate back to when
13 it is -- the diversions rate could be as low as 2,400
14 csf, would be the situation where you bring the Delta
15 down to the equivalent of X2 at Collinsville.

16 MS. BRENNER: And is that analysis based on the the
17 Fischer Delta Model?

18 DR. DENTON: The data I showed from Figure 20 at
19 Holland Tract were from the Fischer Delta Model.

20 MS. BRENNER: Okay. Nothing further.

21 HEARING OFFICER STUBCHAER: Okay. Good timing.
22 Will staff have cross-examination after lunch, or do you
23 have any questions?

24 MR. SUTTON: Just one.

25 MS. LEIDIGH: Looks like two questions.

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1 HEARING OFFICER STUBCHAER: We'll do that now. All
2 right, Mr. Sutton.

3 ---oOo---

4 CROSS-EXAMINATION OF CONTRA COSTA WATER DISTRICT
5 BY STAFF

6 MR. SUTTON: Dr. Denton, just a clarification. On
7 your Figure 4 from Contra Costa Water District's
8 Exhibit 4, dissolved organic carbon.

9 DR. DENTON: Yes.

10 MR. SUTTON: Has it been determined what the
11 sources of the dissolved organic carbon peaks are that
12 you see there; what the sources are?

13 DR. DENTON: I haven't gone into that in any
14 detail. Perhaps, you can cross-examine some of the
15 Delta -- the DWR witnesses later on when they come up.
16 These are municipal water quality investigation data that
17 we were using for this.

18 But they are from agricultural drainage from San
19 Joaquin inflows. There's a number of reasons. Usually
20 it's occurring in the wintertime. Even though you have
21 high Delta outflows you get a lot of rainfall onto the
22 islands, in which case the farmers have to pump that
23 water off. And that could provide a lot of the sources
24 of TOC's, or DOC in this case.

25 MR. SUTTON: And you indicated you get a fair

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1 amount also from San Joaquin River inflow?

2 DR. DENTON: That's a possibility as well.

3 MR. SUTTON: Do you know also on the Sacramento
4 side?

5 DR. DENTON: Much less on the Sacramento side --

6 MR. SUTTON: So then there's --

7 DR. DENTON: -- but there is a source of TOC from
8 there. And that was covered in Dr. Krasner's testimony
9 showing that there's a small amount coming in at the
10 Greene's Landing on the Sacramento side, and it's much
11 larger down at the pump.

12 MR. SUTTON: So there's a significant difference
13 between the Green's Landing values and the Banks values?

14 DR. DENTON: Right. And it's not just that the
15 waters travel across the Delta, there are all these other
16 inputs from the San Joaquin and local island drainage.

17 MR. SUTTON: Thank you.

18 HEARING OFFICER STUBCHAER: Mr. Canaday.

19 MR. CANADAY: Thank you. This is for Dr. Gartrell.
20 In response to some questions earlier, you stated that
21 besides the customers that CCWD provides finished water
22 supplies, there are also other customers that you supply
23 raw water to; is that correct?

24 DR. GARTRELL: That's correct.

25 MR. CANADAY: And do I take it that these customers

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1 then finish water for their customers?

2 DR. GARTRELL: That's correct.

3 MR. CANADAY: And that their technologies, the
4 finished waters are not to the state-of-the-art that
5 CCWD's are?

6 DR. GARTRELL: I will state that they do -- not all
7 of them use ozone, City of Antioch, City of Pittsburg,
8 and Southern California Water Company, certain areas do
9 not use ozone.

10 MR. CANADAY: So their ability to meet some of
11 these future standards that are sitting out there in 1998
12 and 2002, if there are increases of TOC and salinities in
13 the water, their ability to meet those standards will be
14 more difficult than they are today?

15 DR. GARTRELL: Yes. It will be at risk, yes.

16 MR. CANADAY: Okay. Thank you.

17 HEARING OFFICER STUBCHAER: Any other questions? I
18 have one brief question: If you can explain to me the
19 difference in the affects on organic carbons,
20 chlorination versus chloramination.

21 MR. McCOLLUM: Chloramination is primarily used to
22 stop the formation of trihalomethanes. Briefly, THM's
23 have been the DBP of concern for recent history. We're
24 entering into a whole new realm of DBP concerns, but
25 primarily sticking with the historic THM's -- I don't

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1 know how detailed you want me to get on this.

2 HEARING OFFICER STUBCHAER: Not too deeply.

3 MR. McCOLLUM: Okay. Very basically, when you add
4 chlorine, which is a halogen to the natural organics, you
5 get three halogens and a methane, that's trihalomethane.
6 Okay. You have various balances there.

7 When you use free chlorine you have a tendency
8 to drive further toward your maximum potential formation
9 of trihalomethanes. Using chloramination you typically
10 will use free chlorine initially to get the appropriate
11 contact time to disinfect and meet the Giardia
12 requirement, the CT requirement. And then you add
13 ammonia at the tail end of that. The ammonia ties up the
14 chlorine preferentially to the organics that are
15 naturally occurring in the water. So it slows down and
16 virtually arrests the formation of THM's. So using
17 chloramination you significantly limit the production of
18 THM's in the disinfection process.

19 HEARING OFFICER STUBCHAER: Okay. Thank you. Are
20 you going to have redirect, Mr. Maddow?

21 MR. MADDOW: No, sir.

22 HEARING OFFICER STUBCHAER: All right. Do you want
23 to do the exhibits now, then?

24 MR. MADDOW: Yes, sir. We would offer CCWD
25 Exhibits 1 through 5; Exhibit Number 1 is the statements

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of qualifications of each of the persons who have
appeared on behalf of CCWD.

Exhibits 2, 3, and 4 are statements -- the
policy statement of Mr. Bishop, and the expert testimony
of Mr. -- Dr. Gartrell and Dr. Denton. CCWD 5 is the
District's comments on the Draft EIR/EIS. We would offer
all of those into evidence.

HEARING OFFICER STUBCHAER: Any objections?
Hearing none they are accepted into the evidence. And
thank you for your participation.

And after lunch we will have the direct
testimony of East Bay Municipal Utility District followed
at 3:00 p.m., time certain, Department of Interior;
followed by the Department of Water Resources and then
the State Water Contractors. Okay. We'll take a lunch
break until 1:05 p.m.

(Luncheon recess.)

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WEDNESDAY, JULY 23, 1997, 1:05 P.M.

SACRAMENTO, CALIFORNIA

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HEARING OFFICER STUBCHAER: We'll reconvene the Delta Wetlands Water Rights hearing. We'll now hear the direct testimony of East Bay Municipal Utility District. Mr. Etheridge.

MR. ETHERIDGE: Thank you, Mr. Stubchaer. Before we start as I was sitting in the hearing room this morning, I was trying to gauge when East Bay MUD's turn would come up. I was reminded of a story I read of Wimbelton Tennis Tournament where the players know who they will play, but they never know when their match will start, because it is dependent upon the conclusion of the match in front and rain delays and other things. They are constantly on the verge of going, but they never know when.

HEARING OFFICER STUBCHAER: So did you have a rain delay here today?

MR. ETHERIDGE: I noticed that. I'd never guess that for Sacramento in July. Okay. In the absence of a rain delay, we're ready to go.

HEARING OFFICER STUBCHAER: Well, you know I think the weather service's computer model predicted 91 today. Do you think they're going to make it?

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1 MR. ETHERIDGE: I don't think so. Maybe 81.

2 HEARING OFFICER STUBCHAER: Maybe that's a common
3 in all models. I don't know.

4 ---oOo---

5 OPENING STATEMENT BY EAST BAY MUNICIPAL UTILITY DISTRICT

6 BY FRED ETHERIDGE

7 MR. ETHERIDGE: Fortunately in this hearing, EBMUD
8 has not relied on any models. Again, for the record my
9 name is Fred Etheridge. I'm from the Office of General
10 Counsel of the East Bay Municipal Utility District, or
11 EBMUD. I have a brief opening statement, which will be
12 followed by the testimony of Mr. Nuzum and Mr. Bowen.
13 And our direct presentation should take, I think, under
14 an hour.

15 EBMUD supplies water to approximately 1.2
16 million municipal and industrial customers in its East
17 San Francisco Bay service area. EBMUD's primary supply
18 of water is the Mokelumne River. And for nearly 70 years
19 EBMUD has diverted Mokelumne River water from parting
20 reservoir and delivered it through its Mokelumne
21 aqueducts across the Delta to the Bay Area.

22 There are two primary concerns EBMUD has with
23 the proposed Delta Wetlands Project. First, potential
24 fishery impacts. And, second, potential impacts upon the
25 Mokelumne aqueducts. As to the fishery impacts,

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1 Mr. Nuzum will explain that because of the project's
2 proximity to both the North and South Delta forks of the
3 Mokelumne River the proposed Delta Wetlands Project has
4 the potential to negatively impact out-migrating
5 Mokelumne River juvenile salmon and also returning
6 Mokelumne River adult chinook salmon.

7 EBMUD is concerned that such fishery impacts
8 could offset some of the significant fishery's work the
9 District has performed along the Mokelumne River in
10 recent years. EBMUD has developed and is implementing a
11 comprehensive set of flow and non-flow measures designed
12 to protect and enhance the Mokelumne River fishery.
13 Recent returns of adult chinook salmon to the Mokelumne
14 River have met or exceeded the long-term average. Thus,
15 there are significant fishery resources in the Lower
16 Mokelumne River which EBMUD is committed to protecting.

17 Given that the proposed Delta Wetlands Project
18 has potential for significant impacts upon the Mokelumne
19 River fishery, the State Board must consider these
20 impacts; and if the Delta Wetlands Project is approved
21 give recognition to the resulting tradeoff between
22 approving the project on the one hand, and its impacts on
23 the Mokelumne fishery on the other hand.

24 The extent of the fishery impacts should be
25 monitored by Delta Wetlands in a monitoring mitigation

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1 Program required by the State Board. And those impacts
2 upon the fishery should be specifically identified by the
3 State Board as a known consequence of giving approval to
4 the Delta Wetlands Project.

5 Our second area of concern regarding the
6 security of the Mokelumne aqueducts arises from the fact
7 that those aqueducts cross the Delta at a location
8 adjacent to Bacon Island and near Holland Tract, two of
9 the proposed Delta Wetlands Project islands. Because
10 Mokelumne aqueducts convey a primary source of supply for
11 EBMUD customers, the aqueducts essentially serve as a
12 life line to conveying water from parting reservoir to
13 EBMUD. Therefore, protection of the levees of the
14 districts over which the aqueducts pass through the Delta
15 is of paramount concern to EBMUD, because failure of a
16 levee on an aqueduct island would result in probable
17 failure of one or more of Mokelumne aqueducts pipelines.

18 EBMUD is concerned that the Delta Wetlands
19 proposed flooding of project islands could have negative
20 impacts on levee stability. And, therefore, ultimately
21 on the security of the Mokelumne aqueducts. These
22 aqueducts and levee concerns will be explained by
23 Mr. Bowen.

24 And with that I'd like to begin direct
25 examination. Mr. Nuzum has already been sworn in, but I

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1 do not believe Mr. Bowen has. Now might be an
2 appropriate time.

3 HEARING OFFICER STUBCHAER: Please stand. Raise
4 your right hand. You promise to tell the truth in these
5 proceedings?

6 MR. BOWEN: I do.

7 HEARING OFFICER STUBCHAER: Thank you. You may be
8 seated.

9 ---oOo---

10 DIRECT TESTIMONY OF EAST BAY MUNICIPAL UTILITY DISTRICT

11 BY FRED ETHERIDGE

12 MR. ETHERIDGE: Bob, could you, please, provide
13 your full name for the record.

14 MR. NUZUM: Yes. It's Robert C. Nuzum, spelled
15 N-U-Z-U-M.

16 MR. ETHERIDGE: Could you, please, summarize your
17 qualifications.

18 MR. NUZUM: I have worked for the Utility District
19 for 24 years. I am basically in charge of the Natural
20 Resources Department including the fisheries on the Lower
21 Mokelumne River.

22 MR. ETHERIDGE: Are you a certified fishery
23 scientist?

24 MR. NUZUM: I am.

25 MR. ETHERIDGE: For how long?

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1 MR. NUZUM: Since 1979.

2 MR. ETHERIDGE: Okay. Thank you. Did you prepare
3 EBMUD Exhibit Number 3?

4 MR. NUZUM: Yes, I did.

5 MR. JACKSON: Do you have concerns regarding the
6 Delta Wetlands Project potential impacts upon the
7 Mokelumne River anadromous fishery outmigration?

8 MR. NUZUM: Yes, I do.

9 MR. ETHERIDGE: Could you please explain what
10 salmon fry are.

11 MR. NUZUM: Salmon fry are very small juveniles
12 considered to be those that are less than 50 millimeters
13 in length.

14 MR. ETHERIDGE: Okay. When do fry out-migrate from
15 the Mokelumne River?

16 MR. NUZUM: From about the last week in January
17 through March.

18 MR. ETHERIDGE: Are there peaks to that
19 outmigration?

20 MR. NUZUM: Yes, in February and again in March
21 usually.

22 MR. ETHERIDGE: In some years do more of the
23 juvenile salmon from the Mokelumne out-migrate as fry
24 rather than smolts?

25 MR. NUZUM: Yes. Usually in the winter years you

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1 see more migration as fry rather than as smolts.

2 MR. ETHERIDGE: I'd like to put a display on the
3 overhead, Figure 1 from your written testimony which is a
4 map. Can you show the location, or proximity of those
5 Delta Wetlands Project to the Mokelumne River Delta
6 forks.

7 MR. NUZUM: Yes. This is the Mokelumne River.

8 MR. ETHERIDGE: That comes in from the east; is
9 that correct?

10 MR. NUZUM: Coming in from the east. This is where
11 the forks divide. This is the north fork. And this is
12 the south fork meeting here and then running down and
13 into the San Joaquin River.

14 MR. ETHERIDGE: Would it be fair to say that the
15 two forks of the Mokelumne River join on the north-west
16 corner of Bouldin Island, or near that corner?

17 MR. NUZUM: Yes.

18 MR. ETHERIDGE: And then that they continue past
19 the western edge of Bouldin Island and across the
20 northern edge of Webb Track?

21 MR. NUZUM: They would come together and cross Webb
22 here.

23 MR. ETHERIDGE: Okay. Thank you. Does the Delta
24 Wetlands Project pose potential impacts to the Mokelumne
25 River fry outmigration?

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1 MR. NUZUM: Yes. I believe they do.

2 MR. ETHERIDGE: And what are those impacts?

3 MR. NUZUM: Basically, that the preponderance of
4 fry, which is a rearing stage in the Delta, would put the
5 fry in close proximity to Delta Wetlands islands habitat
6 as well as storage.

7 MR. ETHERIDGE: Are there potential entrainment
8 issues associated with the fry?

9 MR. NUZUM: Yes, there are.

10 MR. ETHERIDGE: Can you explain those?

11 MR. NUZUM: Yes. Basically the entrainment issue
12 for fry would be that there are facilities that they are
13 entrained to. And, consequently, they could be lost due
14 to predation and/or if the facilities are not designed
15 appropriately, they could be directly entrained to the
16 project facilities; or they, in fact, could be entrained
17 to river channels that are adjacent to these particular
18 islands and end up being entrained to the southern part
19 of the Delta.

20 MR. ETHERIDGE: Do the fry rear in the Delta? I
21 thought you just mentioned that the fry rear in the
22 Delta.

23 MR. NUZUM: Fry do rear in the Delta until they go
24 through what is called smoltification.

25 MR. ETHERIDGE: So is it possible then that fry

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1 could be in the vicinity of Delta Wetlands Project
2 diversions for some period of time?

3 MR. NUZUM: Yes, they would be, maybe for a couple
4 of months.

5 MR. ETHERIDGE: Okay. Thank you. Are you aware
6 that Delta Wetlands proposes as a fishery mitigation in
7 its Draft EIR to cease diversions in April and May?

8 MR. NUZUM: Yes.

9 MR. ETHERIDGE: What is your opinion of this
10 non-diversion window?

11 MR. NUZUM: Basically, my opinion is that it does
12 not coincide with the fry outmigration from the Mokelumne
13 River. And they're consequent to rearing in the Delta.
14 So the window, as you called it, does not preclude impact
15 on the fry.

16 MR. ETHERIDGE: Is that -- so that's essentially a
17 timing issue? You testified --

18 MR. NUZUM: It's a timing and habitat issue.

19 MR. ETHERIDGE: Okay. Can you explain, briefly,
20 what the salmon smolts are?

21 MR. NUZUM: Briefly they are juvenile salmon
22 greater than 50 millimeters. Usually they're considered
23 to be those that have gone through this smoltification
24 process which is a physiological adaptation to enable
25 them to take in ocean water, or salt water.

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1 MR. ETHERIDGE: Does the proposed Delta Wetlands
2 Project pose potential impacts to Mokelumne River smolt
3 outmigration?

4 MR. NUZUM: Yes, I believe it does.

5 MR. ETHERIDGE: And can you explain those impacts?

6 MR. NUZUM: Well, the project as characterized and
7 also in the biological opinions would not divert during
8 April and May. Those are the peak outmigration months
9 for Mokelumne River smolts. However, the project is
10 looking at an operation to some extent during March and
11 also during June and July. So the Mokelumne River smolts
12 would be there, or some proportion of those smolts could
13 very well be in and around these project islands during
14 operations of outmigration periods.

15 MR. ETHERIDGE: And what if those smolts are within
16 the vicinity of Delta Wetlands Project vicinity, what are
17 the potential impacts upon the smolts?

18 MR. NUZUM: Well, again, I think that you can
19 entrain a larger fish like a smolt to either diversion to
20 the island, or discharge from the island. And,
21 therefore, you would put these smolts right up next to,
22 or in and around the project facilities. And there are
23 predators that are held by facilities like that that
24 could have a substantial predation impact on those
25 smolts.

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1 MR. ETHERIDGE: Okay. Let's switch now to the
2 adult salmon in-migration. Can you, please, show the
3 proximity of Delta Wetlands Project to the likely routes
4 of in-migrating Mokelumne River adult salmon?

5 MR. NUZUM: Yes. In my opinion the adult salmon
6 would come up the San Joaquin, come past Webb Tract and
7 then Bouldin and then come up either the south or north
8 end of the Mokelumne River and spawning would take place
9 primarily from Comanche Dam downstream to Lake Lodi, or
10 to the City of Woodridge.

11 MR. ETHERIDGE: Okay. Do you believe there are any
12 potential Delta Wetlands Project impacts upon
13 in-migrating adult salmon?

14 MR. NUZUM: Yes, I do.

15 MR. ETHERIDGE: And could you explain those
16 impacts?

17 MR. NUZUM: Basically I think that during the
18 periods of time when the project would operate that they
19 could store Mokelumne River water. And that during
20 periods of release, and we've heard testimony that that
21 would be in the July/August time period, September time
22 period primarily, when adult salmon are coming into this
23 system and looking for the necessary olfactory cues that
24 those cues could be very well spread out from the south
25 portion of the Delta, because of Bacon Island storage

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1 and/or close to our area of concern right at Webb -- Webb
2 Tract. So, therefore, it would be a matter of confusion
3 not of being able to find some olfactory scent, but where
4 in the world should they be going.

5 MR. ETHERIDGE: Is that because there will be
6 different places within the Delta where there is the
7 Mokelumne scent.

8 MR. NUZUM: That's our concern, yes.

9 MR. ETHERIDGE: You had mentioned a few minutes ago
10 the issue of predation. And is it your opinion that
11 there would be potential predation impacts caused by the
12 Delta Wetlands Project upon the Mokelumne River juvenile?

13 MR. NUZUM: Yes.

14 MR. ETHERIDGE: Could you describe those impacts?

15 MR. NUZUM: On Mokelumne River juveniles?

16 MR. ETHERIDGE: The impacts that are created by the
17 proposed Delta Wetlands facilities and the predation
18 impacts.

19 MR. NUZUM: Yes. The project includes the
20 installation of a number of pilings, the installation of
21 a number of boat docks which provide a shade --
22 shade-type habitat for somewhere between 3 -- 330 and
23 1200 boats, I believe, in and around these various
24 islands that we were discussing.

25 And in addition to that they have a large number

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1 of large diameter pipes. Some with barrel screens and
2 some without. And all of those facilities would, in my
3 opinion, hold large predators that would prey upon
4 juvenile salmon and other fish, not just salmonids.

5 MR. ETHERIDGE: Okay. So in other words, the
6 facilities act as harboring areas for predators?

7 MR. NUZUM: Right.

8 MR. ETHERIDGE: Could you briefly explain EBMUD's
9 lower Mokelumne River resource efforts?

10 MR. NUZUM: Yes, I can. Through both the Lower
11 Mokelumne River Management Plan in its recent
12 negotiations in the FERC proceeding EBMUD has developed a
13 comprehensive fisheries program of flow as well as
14 non-flow components. The goal of these measures is to
15 better understand and to protect and to improve the Lower
16 Mokelumne River anadromous fishery as well as other
17 Mokelumne resources. That fishery is doing well.

18 And in recent years it has seen above average
19 natural river escapement, redd construction which is are
20 nests, hatchery returns and outmigration of Mokelumne
21 River salmon. And I would refer you all to Figure 2 and
22 3 of my written testimony. I don't know that I need to
23 go into that at this point, but those conclusions can be
24 seen from those charts.

25 In conclusion, it is of great concern to East

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1 Bay MUD that some of the benefits of that fishery and
2 habitat work could be adversely impacted by the potential
3 fishery impacts caused by the proposed Delta Wetlands
4 Project.

5 MR. ETHERIDGE: Okay. Thank you. Do you have any
6 recommendations as to Delta Wetlands fishery mitigations?

7 MR. NUZUM: Yes, I do.

8 MR. ETHERIDGE: And what are those recommended
9 mitigations?

10 MR. NUZUM: We went over those in previous
11 testimony, but just briefly in summary: That predation
12 impacts need to be assessed through predation surveys
13 combined with some level of stomach content analysis.
14 And in addition that the results of whatever monitoring
15 is required of the project proponents that that
16 information be provided to East Bay MUD at the same time
17 that it's provided to the State Board and to the resource
18 entities.

19 And that the State Board -- we would request
20 that they would assess the results of that information
21 and take whatever corrective action is necessary to
22 protect the Mokelumne River anadromous fishery.

23 MR. ETHERIDGE: Okay. Thank you. Thank you,
24 Mr. Nuzum.

25 Mr. Bowen, could you, please, state and spell

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1 your full name for the record.

2 MR. BOWEN: I'm Russell B. Bowen, B-O-W-E-N.

3 MR. ETHERIDGE: Could you, please, summarize your
4 qualifications.

5 MR. BOWEN: I have a Bachelor of Arts degree from
6 the University of California Davis; a Master of Science
7 degree from Colorado University. I've worked in the
8 water industry for 20 years, the last 10 of which have
9 been with East Bay Municipal Utility Districts.

10 I've held a position of manager of water
11 production. I'm currently the manager of Water System
12 Operations. In both of those positions I've -- I'm
13 responsible for the operation and maintenance of
14 Mokelumne aqueducts.

15 MR. ETHERIDGE: Okay. Did you prepare EBMUD
16 Exhibit Number 4?

17 MR. BOWEN: Yes, I did.

18 MR. ETHERIDGE: What is the purpose of your
19 testimony here today?

20 MR. BOWEN: It is to explain the concerns that East
21 Bay Municipal Utility District has with respect to the
22 Delta Wetlands Project operation on the security of the
23 Mokelumne aqueducts, where they cross the Delta.

24 MR. ETHERIDGE: Your written testimony states that
25 the aqueducts serve as East Bay MUD's life line. Could

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1 you, please, explain what you mean by that?

2 MR. BOWEN: Approximately 95 percent of the water
3 supply for the East Bay Municipal Utility District's
4 service area originates in the Mokelumne watershed and is
5 transported to the Bay Area from the parting reservoir
6 via through the Mokelumne aqueducts.

7 MR. ETHERIDGE: Can you show the aqueducts on
8 Figure 2 from your written testimony?

9 MR. BOWEN: Yes, I can. The aqueducts cross the
10 San Joaquin River, run underline -- underground, excuse
11 me, until approximately Holt. And then they are elevated
12 across the upper Jones/Woodward Island and/or Wood Tract.

13 MR. JACKSON: On Woodward Island, how close to the
14 northern levees of that island do the aqueducts pass?

15 MR. BOWEN: About 200 feet and run parallel all the
16 way across the northern edge of the island.

17 MR. ETHERIDGE: Can you explain how the aqueducts
18 are supported as they cross the Delta?

19 MR. BOWEN: The aqueducts are supported on piles of
20 various depths. The shallowest piles are on the oldest
21 aqueduct, the Mokelumne Number 1. The deepest piles
22 support Mokelumne Aqueduct Number 3. There are pile
23 caps -- concrete pile caps, vents, and then cradles which
24 actually support the pipes themselves.

25 MR. ETHERIDGE: Okay. Has there been historic

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1 flooding in the Delta?

2 MR. BOWEN: Yes, there has been.

3 MR. ETHERIDGE: Could you, please, explain the past
4 flooding and in particular on Jones Tract.

5 MR. BOWEN: Well, there has been a number of them
6 occurring about every ten years. The Jones Tract
7 flooding occurred in 1980. Lower Jones suffered a levee
8 failure on its northern levee, was inundated and the only
9 separation between Lower Jones and Upper Jones is a
10 railroad embankment.

11 MR. ETHERIDGE: Shown on Figure 2, isn't it?

12 MR. BOWEN: Right. The -- this railroad
13 embankment, our aqueducts run about 200 feet away from
14 that embankment. During inundation of Lower Jones that
15 embankment, which is not designed as a levee, failed and
16 allowed water to rush into the Upper Jones creating scour
17 in the vicinity of the aqueducts.

18 MR. ETHERIDGE: So there was scour located near the
19 aqueducts?

20 MR. BOWEN: Yes, there was, approximately 60-feet
21 deep.

22 MR. ETHERIDGE: Okay. What do you see the risks to
23 the Mokelumne aqueducts to be from a levee failure on an
24 aqueduct island and a cross failure on a nearby island?

25 MR. BOWEN: Well, we would see -- expect to see the

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1 same kind of problem that occurred on Jones Tract should
2 the north levee of Woodward Island fail, only the degree
3 of scour and the potential damage to the aqueducts would
4 be much greater. Adjacent islands would cause the
5 potential for increased erosion of levees protecting our
6 aqueducts, increased maintenance for us.

7 MR. ETHERIDGE: Okay. So even if the levee of an
8 aqueduct island did not fail, the failure of levees on an
9 adjacent island, for example, Bacon Island, could
10 increase the risk to aqueduct islands?

11 MR. BOWEN: Absolutely. It would expose the north
12 levee at Woodward to much greater wave action, potential
13 overtopping.

14 MR. ETHERIDGE: Okay. Do you have any specific
15 concerns over the proposed Delta Wetlands Project and
16 potential impacts on EBMUD's aqueducts?

17 MR. BOWEN: Yes, I do. There are no -- no
18 mechanisms contained in the project description to
19 account for potential increased maintenance of levees
20 protecting our aqueducts or on adjacent islands. The
21 proposed seepage monitoring plan is, in my opinion,
22 inadequate.

23 The historical database upon which it is based
24 is insufficient. The proposal for additional monitoring
25 piezometers once the project is approved I think are too

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1 few in number and they are spaced too far apart. The
2 mitigation measures which are proposed are, at best,
3 uncertain. And it's not clear to me how the seepage data
4 which are gathered will be handled, distributed, who will
5 evaluate those data, and the basis for the triggers --
6 the mitigation or remediation triggers is unclear.

7 MR. ETHERIDGE: Okay. Do you have any concerns
8 regarding discharges from Bacon Island?

9 MR. BOWEN: Yes. The potential for discharges
10 creating localized scouring philosophy is a concern, and
11 the damage that that could cause to -- to levees both on
12 Bouldin Island and adjacent islands.

13 MR. ETHERIDGE: Okay. Do you have recommended
14 mitigation measures for the Delta Wetlands Project?

15 MR. BOWEN: Yes. With regard to piezometer
16 locations, or monitoring well locations if the project
17 were to be approved on those islands immediately adjacent
18 to project islands and levees protecting Mokelumne
19 aqueducts, I would look to have monitoring locations
20 spaced at intervals of approximately every 200 feet
21 rather than the closest intervals of a thousand feet as
22 described in the environmental documentation.

23 I would expect a better description of the
24 monitoring -- the triggers for remedial action than plus
25 or minus -- or two -- two-standard deviation plus one

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1 foot for piezometer or .25 for a group of three as
2 described in the documentation currently. And we need to
3 make adjustments for seasonal variations at groundwater
4 levels as well.

5 MR. ETHERIDGE: Okay. Do you have any
6 recommendations as to a further monitoring and mitigation
7 program for the project?

8 MR. BOWEN: We need to have a constant program that
9 addresses not only seepage, but also accelerated erosion
10 or other damage on levees attributable to project
11 operation. We need to have a better set of data created
12 for baseline conditions pre -- pre-project baseline
13 conditions. There needs to be a better description of
14 what the long-term data collection process will be and
15 how those data will be handled.

16 We need to assure -- be assured that the project
17 will provide guarantees for levee protection, or levee --
18 correction of any levee for damage attributable to them.
19 And we need, I think, a better demonstration that the
20 remediation use of interceptor wells described would be
21 effective in this kind of a situation.

22 MR. ETHERIDGE: Okay. You had -- you had mentioned
23 a financial guarantee. Can you explain what you mean by
24 that?

25 MR. BOWEN: It's critical. Reclamation of an

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1 island after a levee failure, or prevention of a levee
2 failure is a very expensive proposition. We need to be
3 assured that that burden will not fall on existing
4 stakeholders as a result of the operation of the project.

5 Probably the worse case description would be a
6 reservoir island would be filled, the project operator
7 would become insolvent and unavailable to correct
8 problems. We would have the potential for levee failure
9 on either the project island, or the reservoir island; or
10 subsequent to that, increased erosion and potential
11 failure of a levee protecting our aqueducts.

12 So for that reason I see it necessary that there
13 be a very specific financial guarantee to protect those
14 of us who are in the Delta currently.

15 MR. ETHERIDGE: Okay. Thank you. That concludes
16 our direct examination.

17 HEARING OFFICER STUBCHAER: Thank you. Very good.
18 Nice and concise, thank you. May I have a show of hands
19 of the parties who wish to cross-examine this panel?
20 Okay. I see two.

21 Delta Wetlands, Mr. Nelson.

22 MR. NELSON: Mr. Stubchaer, I'll be doing cross of
23 Mr. Nuzum and Ms. Brenner will be doing cross-examine for
24 Mr. Bowen.

25 HEARING OFFICER STUBCHAER: Okay.

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CROSS-EXAMINATION OF EAST BAY MUNICIPAL UTILITY DISTRICT

BY DELTA WETLANDS PROPERTIES

BY JOSEPH NELSON

MR. NELSON: Good afternoon, Mr. Nuzum.

MR. NUZUM: Mr. Nelson, how are you?

MR. NELSON: Good. Let me understand your testimony with respect to what your concerns are --

MR. NUZUM: Yes.

MR. NELSON: -- on behalf of East Bay MUD. You're not concerned about temperature related effects from January to June around Webb Tract because there are no discharges; is that correct?

MR. NUZUM: That is correct.

MR. NELSON: The same would applied to dissolved oxygen levels around Webb Tract around that same period for fry; isn't that correct, January to June?

MR. NUZUM: January to June around Webb Tract, no, I would not be concerned about that.

MR. NELSON: And your concern regarding fry is not direct entrainment at the Delta Wetlands diversions because Delta Wetlands has screen velocity of 0.2 feet a second at its diversion; is that correct?

MR. NUZUM: Your approach philosophy is very low and that would mitigate actual entrainment to the

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1 facility, meaning that you're going to potentially
2 impinge the fish up against the screen, yes, that's true.

3 MR. NELSON: Okay. So when it gets down to it the
4 things that you are concerned about is predation,
5 entrainment through unscreened diversions elsewhere; is
6 that correct, and --

7 MR. NUZUM: No.

8 MR. NELSON: Oh, you're not concerned about
9 entrainment?

10 MR. NUZUM: No. I didn't say that.

11 MR. NELSON: Okay. And the other one is being
12 moved toward self-Delta pumping facilities, or being
13 entrained in the Central and South Delta?

14 MR. NUZUM: That's true.

15 MR. NELSON: Let's discuss the predation a little
16 bit again. When you refer to predation habitat, isn't it
17 true that you have to have essentially two conditions,
18 one, a habitat that shields its predator; and two,
19 something that attracts the prey fish?

20 MR. NUZUM: Absolutely.

21 MR. NELSON: Isn't it true that salmonid fry can
22 re-enter the shallow water habitat when it is relative
23 calm?

24 MR. NUZUM: Yes, that is very true.

25 MR. NELSON: Isn't it also true that salmonid fry

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1 while they are not as strong swimmers as smolts they are
2 still volitional swimmers that will seek out a suitable
3 habitat?

4 MR. NUZUM: Yes. It's my experience that they will
5 endeavor to do that, yes.

6 MR. NELSON: And isn't it true that Delta Wetlands
7 diversions will take place in deep water, which is not
8 suitable for fry rearing habitat?

9 MR. NUZUM: Fry rearing habitat, that's probably
10 true -- you mean right at the screen itself?

11 MR. NELSON: Its diverting facilities, isn't that
12 correct, that those diversion facilities will be in deep
13 water?

14 MR. NUZUM: The screens are in deeper water,
15 that's correct.

16 MR. NELSON: So, in that case it would not be
17 suitable habitat. And, therefore, it would not be an
18 attraction to that area; is that correct?

19 MR. NUZUM: I don't think that's correct at all.

20 MR. NELSON: Is it your opinion that there's other
21 predation going on in the Central Delta besides predation
22 around boat docks?

23 MR. NUZUM: Absolutely, yes.

24 MR. NELSON: Isn't it true that the most
25 significant predation is occurring at Clifton Court

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1 Forebay?

2 MR. NUZUM: You could be right. I'll give you \$64
3 if you're correct on that.

4 MR. NELSON: Are you aware that Fish and Game has
5 estimated overall predation mortality for juvenile
6 fall-run salmon in Clifton Court Forebay to be as high as
7 98 percent?

8 MR. NUZUM: I'm aware of those figures, yes.

9 MR. NELSON: Isn't it also true that the salmon
10 mortality rate per mile in Clifton Court Forebay has been
11 estimated at more than 90 -- 90 percent per mile?

12 MR. NUZUM: I think you're correct, yes.

13 MR. NELSON: Isn't it also true that the predation
14 per mile figures for the Central Delta are only about
15 three percent?

16 MR. NUZUM: That's your estimate.

17 MR. NELSON: Are you aware the Draft Ecosystem
18 Restoration Program Plan reviewed the draft it after that
19 was issued 6/13/97, June 13, 1997?

20 MR. NUZUM: Yes, I am.

21 MR. NELSON: Are you aware that in that document
22 they state that marked recapture studies estimated
23 mortality rate per mile in the Clifton Court Forebay was
24 91.3 percent compared to 2.7 percent for the Central
25 Delta?

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1 MR. NUZUM: I am aware of that.

2 MR. NELSON: So there were significantly lower
3 rates in the Central Delta than places like at Clifton
4 Court Forebay; is that correct?

5 MR. NUZUM: Yes, that is correct.

6 MR. NELSON: And with respect to predation, the
7 main concerns with respect to significant predation is
8 things like Clifton Court Forebay; is that correct?

9 MR. NUZUM: That's one of the facilities, yes.

10 MR. NELSON: To your knowledge, has East Bay MUD
11 ever recommended that the operation location, or design
12 of the Clifton Court Forebay be altered because of the
13 predation activity that is occurring there?

14 MR. NUZUM: No. We try to keep our fish out of
15 there.

16 MR. NELSON: Just talk a little bit about
17 entrainment into the South Delta.

18 MR. NUZUM: Okay.

19 MR. NELSON: Isn't it true that salmonid fry -- you
20 already stated that salmonid fry are volition swimmers;
21 isn't that correct?

22 MR. NUZUM: That is correct.

23 MR. NELSON: And when they are rearing in the Delta
24 they are seeking out suitable rearing habitat; isn't that
25 correct?

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1 MR. NUZUM: Well, I imagine that's correct, yes.

2 MR. NELSON: So with respect to flows and
3 attractions in the South Delta, isn't it true that --
4 with respect to outmigration the concern for self-Delta
5 flows is attraction, or flow cues for confusing the
6 out-migrating salmon?

7 MR. NUZUM: Yes, that would be -- that would be a
8 substantial concern. Flow cues that's how you describe
9 it?

10 MR. NELSON: Yes. Isn't it true that rearing fry
11 are not looking at flow cues, they're looking for
12 suitable habitat?

13 MR. NUZUM: Looking for suitable habitat, that's
14 correct.

15 MR. NELSON: Isn't it also true that fry do not --
16 you stated I believe that fry do not out-migrate. They
17 wait for the smoltification before they out-migrate to
18 seawater?

19 MR. NUZUM: From the Delta?

20 MR. NELSON: From the Delta.

21 MR. NUZUM: Yes, that's true.

22 MR. NELSON: And that smolt migration occurs in
23 April and May when Delta Wetlands is prohibited from
24 diversions; is that correct?

25 MR. NUZUM: That is correct. Predominantly during

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1 April and May, that's true.

2 MR. NELSON: Let's talk a little bit about March --
3 February/March period you noted your concern with regard
4 to salmon fry.

5 MR. NUZUM: Yes.

6 MR. NELSON: Isn't it true that Delta Wetlands is
7 subject to the Water Quality Control Plan and Accord
8 objectives in February and March?

9 MR. NUZUM: In the Corp objectives?

10 MR. NELSON: Accord.

11 MR. NUZUM: Accord, yes, that's true.

12 MR. NELSON: And isn't it further true that Delta
13 Wetlands final operations criteria add additional
14 measures and restrictions upon Delta Wetlands during
15 those months?

16 MR. NUZUM: Yes, you do.

17 MR. NELSON: Isn't it also true in examining the
18 final operations criteria that Delta Wetlands operations
19 are successfully more restricted from January through
20 March, that the restrictions on the operational measures
21 become more stringent.

22 MR. NUZUM: From January --

23 MR. NELSON: Through March.

24 MR. NUZUM: Through March.

25 MR. NELSON: Successfully more restrictive?

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1 MR. NUZUM: Excuse me for just a moment. Yes,
2 you're accurate in what you said.

3 MR. NELSON: Okay. Finally, isn't it true that
4 during wetter years Delta Wetlands is likely to have
5 already filled before the February/March period that you
6 were discussing concern about out-migrating fry?

7 MR. NUZUM: You may be correct in that, yes. You
8 may not be.

9 MR. NELSON: And with respect to out-migrating --
10 out-migrating fry, their presence in the Delta is
11 typically tied to high flows, isn't it, and wetter years?

12 MR. NUZUM: Yes, it is true.

13 MR. NELSON: So to the extent that the Delta
14 Wetlands is filling and storing to higher levels during
15 those wetter years and does not divert in February and
16 March those impacts would not occur; isn't that correct?

17 MR. NUZUM: I believe that is true, yes, except for
18 the facilities themselves.

19 MR. NELSON: Okay. Is it your understanding that
20 those diversion facilities would be in the water even
21 when Delta Wetlands is not operating?

22 MR. NUZUM: I think that the pipes would remain,
23 but the barrel screens would be removed. That's my
24 understanding anyhow.

25 MR. NELSON: And in that case some significant

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1 portion of the structure will be removed from the water
2 and there will be less predator habitat if it occurs at
3 all?

4 MR. NUZUM: I like your last characterization very
5 much, but the screens would be removed. And that is a
6 substantial surface area that I believe would attract and
7 hold predators when they are in place, yes.

8 MR. NELSON: So to the extent they're removed after
9 the Delta Wetlands islands are full that would remove
10 an -- an attraction for predators?

11 MR. NUZUM: Yes.

12 MR. NELSON: Let's go to olfactory cues and your
13 confusion with upstream migrating salmon.

14 MR. NUZUM: Yes.

15 MR. NELSON: It's my understanding that your
16 concern as you stated it today is that Delta Wetlands
17 discharges may contain some portion of particles from the
18 Mokelumne River which when discharged would confuse
19 upstream migrating salmon; isn't that correct?

20 MR. NUZUM: That is correct.

21 MR. NELSON: And isn't it also true, I believe, in
22 your direct testimony you noted that the upstream
23 migrating starts in September and runs through December
24 31st, approximately?

25 MR. NUZUM: That's when they enter the Mokelumne

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1 River, yes.

2 MR. NELSON: Isn't it true that Delta Wetlands main
3 months of discharge are July and August?

4 MR. NUZUM: That's when the salmon are there, yes.

5 MR. NELSON: Excuse me?

6 MR. NUZUM: The adult salmon are there in July and
7 August, yes.

8 MR. NELSON: How long does it take for upstream
9 migration to occur?

10 MR. NUZUM: Without delay it could be a couple
11 days. For example, from Collinsville an adult salmon
12 could easily make its way into the Mokelumne River. And
13 with delays, who knows how long.

14 MR. NELSON: Okay. Under present Delta --
15 actually, do you have the map, the 1987 waterways map?

16 MR. BOWEN: Yes.

17 MR. NELSON: Under present Delta conditions isn't
18 it true that Mokelumne River flows enter the Delta but
19 don't particularly maintain a hydrologic unity so that
20 the flow is evenly mixed, presently, when it enters the
21 Delta, it sloshes around?

22 MR. NUZUM: Certainly, I think that's true of all
23 river systems.

24 MR. NELSON: Okay. So to the extent this confusion
25 exists, it exists right now; isn't that true?

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1 MR. NUZUM: To some extent it exists right now,
2 that's right.

3 MR. NELSON: And is it your understanding that
4 right -- right now do you know how much, or what portion
5 of the Sacramento River water is detrained through the
6 DCC and Georgiana Slough into the Central Delta in that
7 period, that upstream migration period?

8 MR. NUZUM: Are you talking about under the
9 biological opinions, or now?

10 MR. NELSON: Now, presently.

11 MR. NUZUM: I do not know.

12 MR. NELSON: Would you consider it a significant --
13 significant amount of flows that are entering the Delta
14 at that point and mixing with the Mokelumne River --
15 River flows?

16 MR. NUZUM: Yes, I would.

17 MR. NELSON: And that water is then pushed down
18 into the Central Delta so you have both a mixed -- once
19 again you have mixing that occurs both before, or right
20 as the Mokelumne River reaches the Delta and then
21 significant mixing and dispersion of Mokelumne River
22 waters down into the banks of Tracy right now; isn't that
23 correct?

24 MR. NUZUM: You could very well have that. Our
25 runs of some of the modeling that's been described here

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1 today indicate Mokelumne River particles go down that
2 far, yes.

3 MR. NELSON: Has East Bay MUD, to your knowledge,
4 ever recommended altering operations of the South Delta
5 export pumps to avoid confusing the Mokelumne salmon?

6 MR. NUZUM: Not to my knowledge.

7 MR. NELSON: In your written testimony you noted a
8 concern about elevated water temperatures; is that
9 correct?

10 MR. NUZUM: That's correct.

11 MR. NELSON: Are you familiar with the Basin plans,
12 thermal plans, temperature differential for the Delta
13 estuary?

14 MR. NUZUM: Yes, I am.

15 MR. NELSON: And is it your understanding that they
16 include a 20-degree Fahrenheit massive temperature
17 differential between the discharge and the receiving
18 water?

19 MR. NUZUM: 20 degrees?

20 MR. NELSON: 20 degrees for the Bay-Delta estuary.

21 MR. NUZUM: I'm sorry. Restate that, please.

22 MR. NELSON: Is it your understanding that the
23 temperature objectives in the Basin plan, thermal plan
24 allow or require a 20-degree Fahrenheit maximum
25 temperature differential between the discharge and the

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1 receiving water?

2 MR. NUZUM: No, I was not aware of that. Are you
3 sure you're stating that correctly?

4 MR. NELSON: Yes. 20-degree Fahrenheit temperature
5 differential for an acute temperature change.

6 MR. NUZUM: Okay. I'll take your word for it.

7 MR. NELSON: And are you also aware that the
8 thermal plan requires that discharges not result in an
9 increase of more than four degrees Fahrenheit than the
10 receiving one?

11 MR. NUZUM: Yes, I am.

12 MR. NELSON: Would you -- do you believe that those
13 criteria are protective of salmon?

14 MR. NUZUM: Depends on what the temperature is when
15 you start out.

16 MR. NELSON: So you don't -- you do not agree that
17 the basic plan and thermal plan have protective thermal
18 requirements?

19 MR. NUZUM: I didn't mean to imply that, or say
20 that.

21 MR. NELSON: Okay. Looking at -- talking about
22 temperature ranges, did you read or look at the U.S. Fish
23 and Wildlife biological opinion for the Delta Wetlands
24 Project?

25 MR. NUZUM: Yes, I did.

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1 MR. NELSON: And are you aware that the maximum
2 temperature differential allowed under that opinion is
3 only 12 degrees Fahrenheit?

4 MR. NUZUM: Frankly, I thought it was less than
5 that, but --

6 MR. NELSON: It's -- actually, it's stated as seven
7 degrees Celsius.

8 MR. NUZUM: Okay.

9 MR. NELSON: Which, I believe, is approximately
10 12 degrees Fahrenheit.

11 MR. NUZUM: Okay.

12 MR. NELSON: Are you, also, aware that under Delta
13 Wetlands temperature plan as stated in the biological
14 opinion Delta Wetlands may not increase the temperature
15 of the receiving channel water by more than 40 -- 44
16 degrees Fahrenheit when water -- when waters are below a
17 66 degrees Fahrenheit level?

18 MR. NUZUM: Yes, I am aware of that.

19 MR. NELSON: And are you, also, aware that between
20 66 and 77 degrees Fahrenheit the temperature requirement
21 for increases in the channel receiving water is only 2
22 degrees Fahrenheit, only allows it a two-degree
23 Fahrenheit increase?

24 MR. NUZUM: Between 66 and what?

25 MR. NELSON: 77 degrees.

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1 MR. NUZUM: Most of the salmon would be dead at
2 that so you wouldn't have to worry.

3 MR. NELSON: That's correct.

4 MR. NUZUM: I am aware of that.

5 MR. NELSON: Yes.

6 MR. NUZUM: I'm sorry I said that.

7 MR. NELSON: Yes. I will stipulate that the
8 mortality, I believe, incipient mortality level for
9 temperature salmon is around 75, 76 degrees.

10 MR. NUZUM: Right.

11 MR. NELSON: Is that under threat, or --

12 MR. NUZUM: Yes, it is.

13 MR. NELSON: Okay. In your testimony you -- when
14 you're referring to elevated water temperatures, are you
15 referring to an instantaneous measurement, or are you
16 referring to an elevated temperature over a certain
17 period of time?

18 MR. NUZUM: I would really be concerned about
19 anything that would be longer than a day lag.

20 MR. NELSON: Longer than a day lag?

21 MR. NUZUM: Right. Meaning that you're likely to
22 have a temperature variation within a day of plus or
23 minus four degrees. Anything beyond that I think
24 you're -- you're in trouble.

25 MR. NELSON: Okay. And is it your experience that

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1 exposure periods of four degrees for more than one day is
2 a -- will result in a significant adverse affect?

3 MR. NUZUM: It could. It just would depend on what
4 the temperature is when you go in. If you're at 66 and
5 now you're at 70, yes. The answer is, yes.

6 MR. NELSON: Over a one-day period?

7 MR. NUZUM: Yes.

8 MR. NELSON: Do you know of any studies that
9 identify impacts over a one day period for a four-degree
10 change?

11 MR. NUZUM: No, I'm not aware of studies like you
12 just described.

13 MR. NELSON: Isn't it true that most of the
14 temperature studies have typically looked at elevated
15 temperature exposure periods of around three to four
16 weeks?

17 MR. NUZUM: Yes.

18 MR. NELSON: And in those cases isn't it true that
19 the studies have shown while some stress occurs at
20 elevated temperatures between 66 and 75 that is not a --
21 not a mortality level for 75 degrees over three or four
22 weeks can result in mortality; isn't that correct?

23 MR. NUZUM: It can. That's a good way to
24 characterize it.

25 MR. NELSON: So you would agree that an average

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1 period of one day is appropriate when measuring a
2 temperature differential, and that a four-degree change
3 in the receiving channel temperature over one day would
4 be protective of the salmon?

5 MR. NUZUM: Well, again, I think it depends on what
6 the temperature level is when you add on those four
7 degrees.

8 MR. NELSON: If the temperature level is below 66
9 degrees.

10 MR. NUZUM: The further below 66 you are the
11 better. If it's 60, much better.

12 MR. NELSON: Lastly, could you analyze, or work
13 with the Delta Wetlands Project effects upon salmon with
14 regard to dissolved oxygen levels and discharges?

15 MR. NUZUM: Can you be more specific?

16 MR. NELSON: Have you looked at the Delta Wetlands
17 dissolve oxygen plan in its water quality monitoring
18 plan?

19 MR. NUZUM: That's included in the documentation?

20 MR. NELSON: Yes, it is.

21 MR. NUZUM: Yes, I have.

22 MR. NELSON: Are you familiar with the Basin's Plan
23 dissolved oxygen objectives?

24 MR. NUZUM: In general, yes.

25 MR. NELSON: Is it your understanding that the

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1 Basin plan provides for a 5.0 milligrams per liter
2 objective for Bay Delta waters for dissolved oxygen?

3 MR. NUZUM: That's my understanding, yes.

4 MR. NELSON: And is it your understanding that the
5 Delta Wetlands discharges will be limited under its
6 dissolved oxygen plan of a level of no less than 6.0
7 milligrams per liter?

8 MR. NUZUM: Yes.

9 MR. NELSON: And are you also -- is it also your
10 understanding that Delta Wetlands dissolved oxygen plan
11 would not allow Delta Wetlands discharges to occur if it
12 were to depress receiving channel DO levels below 5.0
13 milligrams per liter?

14 MR. NUZUM: That's correct.

15 MR. NELSON: So in your judgment given the Basin
16 plan objectives would you agree that those are consistent
17 with and more protective than the Basin plan?

18 MR. NUZUM: Yes, I think I would have to say:
19 That's correct.

20 MR. NELSON: Okay. I have no more questions.

21 HEARING OFFICER STUBCHAER: Okay. Thank you.
22 Ms. Brenner.

23 MS. BRENNER: Thank you, Mr. Stubchaer.

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CROSS-EXAMINATION OF EAST BAY MUNICIPAL UTILITY DISTRICT
BY DELTA WETLANDS PROPERTIES

BY BARBARA BRENNER

MS. BRENNER: Good afternoon.

MR. BOWEN: Good afternoon.

MS. BRENNER: One of the East Bay MUD's mitigation
measures relates to piezometer spacings, correct?

MR. BOWEN: Correct.

MS. BRENNER: Are you familiar with the testimony
by Mr. Holtgren which indicated that over the eight years
of regional groundwater, monitoring has already commenced
including citing of piezometers at locations specifically
requested by Reclamataion Districts Engineers on the
Mokelumne aqueduct islands?

MR. BOWEN: Yes, I am.

MS. BRENNER: And that final project design will
include a number of piezometers and spacing of
piezometers to monitor for the seepage effects?

MR. BOWEN: I'm aware of that, yes.

MS. BRENNER: Okay. Are you aware that the
Reclamation District engineers assisted in the placement
of these piezometers and Delta Wetlands continues to
invite their participation?

MR. BOWEN: I'm not aware of what the current

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1 status is. I know there was a seepage committee that was
2 formed.

3 MS. BRENNER: Okay. Would it satisfy East Bay
4 MUD's concerns if East Bay MUD was allowed to comment on
5 the final piezometer location design and seepage monitor
6 program?

7 MR. BOWEN: I don't know that our being allowed to
8 comment would be, in itself, sufficient.

9 MS. BRENNER: But if you were allowed to comment
10 and provide your comments to the Board, you'll have the
11 ultimate say in the seepage and piezometer program, would
12 that be helpful to East Bay MUD?

13 MR. BOWEN: That would, certainly, be something we
14 would be interested in engaging in. Clearly the purpose
15 of the recommended mitigation measure is to address our
16 concerns about measuring of potential seepage problems.

17 MS. BRENNER: Correct. Okay. You have a
18 recommended mitigation measure 1C which requests the
19 Board require Delta Wetlands implemented a monitoring and
20 mitigation program before issuing water rights permits.

21 Would it also assist East Bay MUD's concerns to
22 know that's exactly what Delta Wetlands has proposed, a
23 monitoring mitigation program whereby the Board would
24 have oversight?

25 MR. BOWEN: Right. But we would look for

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1 modifications of that proposed program.

2 MS. BRENNER: Modifications to the proposed
3 program?

4 MR. BOWEN: Yes.

5 MS. BRENNER: And when you reference the proposed
6 program, are you obtaining information for the
7 Environmental Impact Report?

8 MR. BOWEN: Yes, I am.

9 MS. BRENNER: And it's the information provided in
10 the Impact Report that you're concerned with?

11 MR. BOWEN: Yes, it is.

12 MS. BRENNER: The lack of preciseness, or --

13 MR. BOWEN: There are a couple of things about
14 that. One is that the -- the -- the portion of the plan,
15 basically the triggers that are included for initiating
16 remediation or mitigation action, I think, need to be
17 reevaluated. The baseline data that were used I have
18 reservations about because there were no piezometers in
19 that program in the vicinity of the levees protecting the
20 Mokelumne aqueducts.

21 MS. BRENNER: Okay. So you're concerned with the
22 baseline monitoring that's gone on for the last eight
23 years?

24 MR. BOWEN: Correct.

25 MS. BRENNER: Are you aware that there will be

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1 additional baseline monitoring for a year prior to the
2 filling of any reservoir islands?

3 MR. BOWEN: Yes, I am.

4 MS. BRENNER: And that baseline monitoring will
5 take into consideration each individual island and have
6 additional monitoring setup for each additional island?

7 MR. BOWEN: I understand that, yes.

8 MS. BRENNER: And that doesn't alleviate any of
9 your concerns with regard to background levels?

10 MR. BOWEN: No, it doesn't. That's only one year
11 of more intense monitoring in the intervals between
12 piezometers, particularly in the vicinity of the
13 Mokelumne aqueducts that are greater than we would
14 propose that they be set.

15 MS. BRENNER: Well, my understanding of the
16 background monitoring that's going to take place a year
17 prior hasn't been finalized. That's why I'm creating --
18 I'm a little bit confused of your understanding and my
19 understanding of what's going to occur.

20 MR. BOWEN: Okay.

21 MS. BRENNER: There's a recommended piezometer
22 placement, but there hasn't been any set determination as
23 to how -- where the piezometers will be set up.

24 MR. BOWEN: Okay. For example, my understanding is
25 on Woodward Island on the north levee, the proposed

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1 interval between piezometers is about a thousand feet.
2 We're suggesting that should be reduced on the order of
3 something like 200 feet.

4 MS. BRENNER: Okay.

5 MR. BOWEN: I'm also concerned that we would only
6 have one year of data with that more extensive number of
7 piezometers upon which to develop the baseline.

8 MS. BRENNER: Well, they'll be continuing
9 monitoring, right?

10 MR. BOWEN: I understand that, but if the triggers
11 are based on the information developed from this baseline
12 study then I am concerned we would only have a year's
13 worth of data.

14 MS. BRENNER: Do you feel there is a huge
15 fluctuation in what occurs in the Delta on the
16 groundwater levels?

17 MR. BOWEN: There certainly can be.

18 MS. BRENNER: Do you have any evidence of that?

19 MR. BOWEN: I have a report from Mr. Holtgren that
20 was provided to Delta Wetlands that shows that there are
21 variations among the wells that are being measured now.

22 MS. BRENNER: Based on tidal influences?

23 MR. BOWEN: Not just tidal influences.

24 MS. BRENNER: Some slight seasonal --

25 MR. BOWEN: I would not characterize it as more

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1 than slight.

2 MS. BRENNER: We have that information, do we not?

3 MR. BOWEN: You have some information, yes.

4 MS. BRENNER: And we're going to add to that
5 information base.

6 MR. BOWEN: That's what I understand the proposal
7 to be.

8 MS. BRENNER: Okay. After discussing those
9 measures isn't your recommended mitigation measure number
10 two basically the same thing as what we've discussed,
11 that the Delta Wetlands monitoring mitigation program
12 would be put into place? Isn't that the same as your
13 mitigation number two?

14 MR. BOWEN: The one which states that there must be
15 a requirement upon Delta Wetlands to promptly take
16 remedial measures to measure any levee stability and
17 related impacts caused by the project?

18 MS. BRENNER: Right.

19 MR. BOWEN: This one is more specific with respect
20 to the action to be taken in the event that the
21 monitoring program determines that there are seepage
22 problems, or that there is a potential stability problem
23 being created upon the levees.

24 MS. BRENNER: Okay. That's a mitigation program,
25 isn't it?

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1 MR. BOWEN: That's a mitigation program, but it's
2 different than just a monitoring program.

3 MS. BRENNER: Right.

4 MR. BOWEN: I mean it's saying there must be
5 actions to correct the problem.

6 MS. BRENNER: What I'm trying to communicate to you
7 is that Delta Wetlands has recognized that and indicates
8 to the Board, in fact, that they propose a monitoring and
9 mitigation program for both the -- for the seepage system
10 that will be put into place. And isn't that the same
11 thing that East Bay MUD is requesting?

12 MR. BOWEN: Conceptually it is the same thing, yes.

13 MS. BRENNER: Okay. You indicated some information
14 about sizes of breaches because of levee failures,
15 correct? We get -- get different breaches based upon
16 the -- let's backtrack.

17 When the levee breaks you get a certain scouring
18 affect, scouring affect, or the -- affects of that breach
19 are dependent upon a couple of factors.

20 MR. BOWEN: Could you re-ask --

21 MS. BRENNER: Size of breach -- yeah, let me back
22 up.

23 Can you tell me if this is true: The factors
24 that most affect the size of a breach are the size of the
25 islands, the differences in elevation between the channel

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1 water levels and the interior island elevation?

2 MR. BOWEN: The latter is true. The size of the
3 islands would not have an affect on the size of the
4 breach.

5 MS. BRENNER: So in your opinion, it's the
6 difference in the elevation between the channel water
7 levels and the interior island elevation?

8 MR. BOWEN: That certainly would be one, yes. And
9 the material of levee would be another.

10 MS. BRENNER: The material of levee would determine
11 the amount of levee break, would have an impact on the
12 amount of the --

13 MR. BOWEN: The material in the levee would
14 determine how quickly it would erode.

15 MS. BRENNER: How quickly it would erode. Okay.
16 So it's the elevation between the channel water levels,
17 the interior water elevation, the type of soils under the
18 levee?

19 MR. BOWEN: And the type of the material that the
20 levee itself is constructed of.

21 MS. BRENNER: Okay. And isn't it true the deeper
22 the island the bigger the breach would be if there were a
23 levee failure?

24 MR. BOWEN: Yes, that would be true.

25 MS. BRENNER: Okay. The deeper the island the more

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1 it would cost to recover the island in the event of a
2 levee failure?

3 MR. BOWEN: That's quite likely.

4 MS. BRENNER: And isn't it true that the Delta
5 islands continue to subside?

6 MR. BOWEN: Yes, that's true.

7 MS. BRENNER: So the difference between the channel
8 level water and the island water continues to be greater?

9 MR. BOWEN: Yes, that's true.

10 MS. BRENNER: So if you could control the islands
11 around you, wouldn't you want to stop the subsidence and
12 improve the levees?

13 MR. BOWEN: That could be beneficial, yes.

14 MS. BRENNER: East Bay MUD contributes to the
15 Reclamation District for various islands along its
16 aqueduct line including Woodward Island and has
17 contributed 2.9 million to five Reclamation Districts
18 since 1982 to protect 50 miles of levee? Is that true?

19 MR. BOWEN: Yes.

20 MS. BRENNER: And has East Bay MUD ever requested a
21 landowner to provide a performance bond, or financial
22 guarantee like the ones its requested from Delta
23 Wetlands?

24 MR. BOWEN: No.

25 MS. BRENNER: Has East Bay MUD determined what

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1 level of increase maintenance costs would be required
2 because of the Delta Wetlands Project?

3 MR. BOWEN: No, we haven't.

4 MS. BRENNER: You haven't made any such assessment?

5 MR. BOWEN: No.

6 MS. BRENNER: Are the levees adjacent to the
7 Mokelumne aqueducts equal to State Bulletin 192-82
8 standards?

9 MR. BOWEN: State Bulletin 192-82, that I don't
10 know.

11 MS. BRENNER: In your written testimony did you
12 indicate that the East Bay MUD was going to improve their
13 levees to the Army Corp of Engineers PL 99, or the FEMA
14 HMP standards?

15 MR. BOWEN: The testimony says that most of those
16 50 miles of levee protecting the aqueduct are already at
17 the HMP level and we are working with the Reclamation
18 Districts to get those levees increased to the PL 99
19 level.

20 MS. BRENNER: Do you know if the PL 99 is more
21 protective, or less protective than the 192-82 standards?

22 MR. BOWEN: I don't know

23 MS. BRENNER: You don't know?

24 MR. BOWEN: No.

25 MS. BRENNER: Are you aware that Delta Wetlands is

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1 proposing to build their levees to the 192-82 standards?

2 MR. BOWEN: I know they're improving them and I
3 don't recall to which standard they were going to improve
4 for.

5 MS. BRENNER: Okay. Isn't it true that the one of
6 the reasons East Bay MUD contributes substantial sums of
7 monies to various Reclamation Districts is because of the
8 continuing subsidence as a result of agricultural
9 activities in the Delta?

10 MR. BOWEN: It's because we do have some
11 subsidence, that's one reason. There's no agricultural
12 activities on the levee itself, however.

13 MS. BRENNER: Not on the levee itself, but on the
14 islands that the levee is protecting; isn't there?

15 MR. BOWEN: Well, I think that there are different
16 mechanisms causing subsidence.

17 MS. BRENNER: Okay. Is there a point that the
18 Delta will get to that they can't just keep stabilizing
19 these levees and build them higher and higher? Is there
20 some sort of economic limit as to how high the levees can
21 go in the Delta?

22 MR. BOWEN: There may be. I don't have a
23 projection of when that might occur, or under what
24 conditions, however.

25 MS. BRENNER: But we have continued substantial

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1 subsidence in the Delta, don't we?

2 MR. BOWEN: We do have subsidence, yes, continuous
3 subsidence.

4 MS. BRENNER: Okay. I have nothing further.

5 HEARING OFFICER STUBCHAER: Thank you. Mr. Moss.

6 ---oOo---

7 CROSS-EXAMINATION OF EAST BAY MUNICIPAL UTILITY DISTRICT

8 BY PACIFIC GAS AND ELECTRIC

9 BY RICHARD MOSS

10 MR. MOSS: Thank you, Mr. Stubchaer.

11 Richard Moss for Pacific Gas and Electric. I
12 have a few questions. First of all: Has Delta Wetlands
13 attempted to reach a settlement with East Bay MUD to
14 address your issues of concern?

15 MR. BOWEN: No.

16 MR. MOSS: Have you had any discussions with them?

17 MR. BOWEN: Yes.

18 MR. MOSS: And during those discussions did they
19 ever make any offer to indemnify East Bay MUD for risks
20 caused by the Delta Wetlands Project?

21 MR. BOWEN: No.

22 MR. MOSS: What have you stated to Delta Wetlands
23 specific terms that East Bay MUD would propose to
24 satisfy, or mitigate your concerns? And if so, what are
25 they?

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1 MR. BOWEN: Those are the terms as described in my
2 testimony, East Bay Exhibit 4.

3 MR. MOSS: And could you just briefly review those?

4 MR. BOWEN: Certainly. One, is that we would look
5 for an increased seepage monitoring program increasing
6 the interval piezometers particularly along those levees
7 that are protecting Mokelumne aqueducts to a 1 to 200
8 foot interval. We're looking for a better explanation of
9 how the triggers for the remediation actions to be taken
10 by the project were derived. We are looking for the
11 financial guarantee for increased costs and risks
12 associated with -- with that project to our aqueducts.

13 MR. MOSS: In your testimony you spoke about the
14 risk, or potential of -- caused by scouring in the break.
15 Would such scouring potentially cause failure of the
16 aqueduct?

17 MR. BOWEN: Yes.

18 MR. MOSS: And could you describe how that might
19 occur?

20 MR. BOWEN: The aqueducts run parallel. As I
21 described earlier they are all -- for example, on
22 Woodward Island they are elevated. They're supported on
23 piles and vents. A levee failure in that area close to
24 the aqueducts would undermine the support system, taking
25 out our aqueduct number three, which is the northerly

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1 most aqueduct. That in turn -- that's an 87 -- 87-inch
2 diameter pipe, which would be moving south into aqueducts
3 number one and number two. So we would have a domino
4 affect set up as they began to fail.

5 MR. MOSS: If -- if by chance the -- the islands
6 flooded without actually causing line failure, could you
7 operate the pipelines underwater, or in the flooded
8 condition?

9 MR. BOWEN: They're not designed to be operated in
10 an inundated condition. We would lose our aquatic
11 protection system, our ability for maintenance would be
12 eliminated, or severely reduced. And the codings on
13 those pipes are not designed to be exposed to continuous
14 submergence, or saturated conditions.

15 MR. MOSS: Is East Bay MUD prepared with either
16 equipment, or personnel to attend to whatever might
17 happened if, in fact, the lines were flooded?

18 MR. BOWEN: We would -- since those are our life
19 lines, we would try to do something. We would typically
20 expect to have the island reclaimed before we began
21 repair operations.

22 MR. MOSS: Are you familiar with the testimony of
23 Dr. Jeffrey Egan that was offered by Delta Wetlands as
24 their Exhibit 18?

25 MR. BOWEN: I -- I don't recall it.

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1 MR. MOSS: Dr. -- Dr. Egan is an expert on did --
2 on pipelines, in particular, gas pipelines, but he
3 certainly testified about pipelines. And I'm -- have
4 you -- have you read it?

5 MR. BOWEN: I don't recall reading it.

6 MR. MOSS: I would like to read to you two
7 questions -- short questions and answers that I think are
8 pertinent. He's being asked, of course, about PG&E's
9 pipelines. But question number 15 was:

10 Would PG&E be able to implement the applicable
11 safety maintenance and like management techniques, in
12 this case for our Line 57B, under future reservoir
13 storage operations, i.e., flooded?

14 And his answer was: Yes, PG&E maintenance
15 procedures will simply convert to those normally used for
16 river crossings and other lines that are in shallow
17 water. It's expected that industry standards for shallow
18 and deep water pipelines are met by PG&E in other lines
19 and should not be a problem here either, end quote.

20 Do you feel reassured in regards to -- by this
21 comment in regards to potential impacts on East Bay MUD's
22 waterlines?

23 MR. BOWEN: No. As I said, our pipelines were not
24 designed to be operated in an inundated situation. So
25 that does not sound like it's applicable to our

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1 situation.

2 MR. MOSS: But do you -- for instance, do your
3 lines on some point cross shallow water, or rivers, or
4 other river bodies?

5 MR. BOWEN: Yes, we do have river crossings, yes.

6 MR. MOSS: And you maintain them in those
7 situations?

8 MR. BOWEN: They're designed differently than the
9 elevated portions of the aqueduct.

10 MR. MOSS: Question number 16 from Dr. Egan's
11 testimony: Are the risks of a pipeline increased,
12 decreased, or the same if conditions on Bacon Island
13 change from the existing agricultural operations to store
14 reservoir operations?

15 And he basically says that the risks will be
16 decrease, because there's more risk to having them
17 damaged by farming operations than there is if they're
18 flooded and out of harm's way.

19 Would you, actually, feel that there's
20 potentially less risk if your pipeline was flooded and
21 out of harm's way?

22 MR. BOWEN: Absolutely not. Flooded and out of
23 harm's way are contradictory terms with respect to our
24 pipelines.

25 MR. MOSS: I have no further questions.

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1 HEARING OFFICER STUBCHAER: Okay. Thank you,
2 Mr. Moss.

3 MS. MURRAY: The Department of Fish and Game does
4 have just a few questions for its -- I had not raised my
5 hand previously.

6 HEARING OFFICER STUBCHAER: No, you did not.

7 MS. BRENNER: Is this cross-examine, or redirect?

8 MS. MURRAY: This is cross-examine.

9 MS. BRENNER: It's not based on the questions that
10 Delta Wetlands asked?

11 MS. MURRAY: On his testimony.

12 HEARING OFFICER STUBCHAER: On the written
13 testimony?

14 MS. MURRAY: And oral.

15 HEARING OFFICER STUBCHAER: But not the oral
16 response to cross-examination; is that correct?

17 MS. MURRAY: They're not directly related.

18 HEARING OFFICER STUBCHAER: That's an evasive
19 answer.

20 MS. MURRAY: Well, why don't you allow me to ask
21 the questions and then you'll know.

22 HEARING OFFICER STUBCHAER: And then Ms. Brenner
23 can object. How long do you think you're going to
24 require?

25 MS. MURRAY: Five minutes.

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1 HEARING OFFICER STUBCHAER: Okay.

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3 CROSS-EXAMINATION OF EAST BAY MUNICIPAL UTILITY DISTRICT

4 BY DEPARTMENT OF FISH AND GAME

5 BY NANCEE MURRAY

6 MS. MURRAY: Mr. Nuzum, isn't it true that fry are
7 much poorer swimmers than smolts?

8 MR. NUZUM: Yes, much poorer.

9 MS. MURRAY: And is it your opinion that these very
10 poor swimmers, fry, may be drawn into the area around
11 Delta Wetlands's diversions?

12 MR. NUZUM: Yes.

13 MS. MURRAY: Would these fry also be susceptible to
14 other unscreened diversions?

15 MR. NUZUM: Absolutely.

16 MS. MURRAY: Could these fry then be more
17 susceptible to being transported from their rearing areas
18 into the South Delta?

19 MR. NUZUM: Just because of the nature of the
20 animal and the size and swimming ability, yes.

21 MS. MURRAY: Okay. And in your opinion would the
22 Delta Wetlands Project increase the current rate of
23 predation in the Central Delta?

24 MR. NUZUM: Yes, that's our concern.

25 MS. MURRAY: No further questions.

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1 HEARING OFFICER STUBCHAER: Okay. Staff?

2 Mr. Sutton.

3 ---oOo---

4 CROSS-EXAMINATION OF EAST BAY MUNICIPAL UTILITY DISTRICT

5 BY STAFF

6 MR. SUTTON: Mr. Nuzum, in your written testimony
7 you discussed the fact that there are both -- well,
8 spawning, and production that occurs at the Mokelumne
9 River fishery hatchery; is that correct?

10 MR. NUZUM: That is correct, yes.

11 MR. SUTTON: Do you know if -- at what stage the
12 salmon are released from that facility? Are they fry or
13 smolt, pre-smolts?

14 MR. NUZUM: No. Usually the production is held at
15 least to smolt size, which is about 60 to the pound.
16 From the production standpoint, that's the way they look
17 at it. Or to a larger post-smolt size, which is built 30
18 to the pound; or they hold them until they are yearlings
19 and they are substantially larger than either one of the
20 two I just described.

21 MR. SUTTON: Are those fish marked, or tagged in
22 any way?

23 MR. NUZUM: We're tagging now a good proportion of
24 the production of the Mokelumne River fish hatchery with
25 coded wire tags, yes.

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1 MR. SUTTON: So when you're talking about fry
2 occurring in the Delta, those are only the wild reared
3 ones?

4 MR. NUZUM: Yes.

5 MR. SUTTON: There's nothing coming -- at that
6 stage coming out of the hatchery?

7 MR. NUZUM: Well, that's not the intent. The
8 intent is for the fish in the fish hatchery to stay in
9 the fish hatchery, but one thing leads to another within
10 a fish hatchery. And at times very small fish do manage
11 to get out of that facility.

12 But for 99 and 9/10th's of the production that
13 I'm talking about, I'm talking about in river, Mokelumne
14 River origin fry.

15 MR. SUTTON: Yes. Thank you. Mr. Bowen, I'm
16 unclear, as I understand it the aqueduct and the
17 Mokelumne aqueducts are up on a levee; is that right,
18 they're elevated above the surrounding level of the
19 islands; is that correct?

20 MR. BOWEN: They run parallel to the levees. They
21 are elevated from the base of the island that they're on.

22 MR. SUTTON: When Jones Tract flooded in 1980, was
23 the aqueduct inundated?

24 MR. BOWEN: I don't believe it was completely
25 inundated, but it was a wash, yes.

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1 MR. SUTTON: But the aqueducts are setting up high
2 enough that they are above the high-tide level should a
3 break occur; is that correct?

4 MR. BOWEN: I don't believe that's the case. I
5 had -- I -- we try to keep them dry. So I haven't
6 measured where the pipe is relative to the maximum tide
7 in the Delta.

8 MR. SUTTON: Well, if they were -- if they were a
9 wash I take it by that you mean that there was water
10 lapping around the bottom of pipes?

11 MR. BOWEN: Right.

12 MR. SUTTON: Okay. And there was tidal action
13 going around on Jones Track at that time?

14 MR. BOWEN: That's correct. That break was in
15 July. I don't know if we were at maximum tide at the
16 time that that occurred.

17 MR. SUTTON: Basically, the pipes themselves do sit
18 above the tide level? They're elevated enough so that
19 they sit above most of the tide level?

20 MR. BOWEN: I -- I can't say that for sure.

21 MR. SUTTON: Okay. Thank you.

22 HEARING OFFICER STUBCHAER: Mr. Canaday.

23 MR. CANADAY: Mr. Bowen, earlier we heard testimony
24 from Central Delta Water Agency and some of their
25 Reclamation Districts and they shared a similar concern

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1 that you do about financial guarantees. And one of the
2 things that came out in that testimony under questioning
3 was that one of the ways to provide certain financial
4 guarantees was a surety bond, or letter of credit.

5 Is that what you're thinking about when you're
6 looking for financial guarantees so that if Jones Tract
7 became flooded there would be a part -- one, there would
8 be the financial ability to reclaim the island quickly;
9 and then you would also look for a trigger that would
10 allow that money to be encumbered either by the District
11 or someone else to make that repair? Is that --

12 MR. BOWEN: Some financial mechanism that would be
13 workable under all future conditions. I am not a bond
14 expert, so I don't know how feasible that is as opposed
15 to some other kind of direct deposit. But that's --
16 effectively what you are describing is the result that we
17 are looking for.

18 MR. CANADAY: Okay. Thank you.

19 MS. LEIDIGH: I don't have any questions.

20 HEARING OFFICER STUBCHAER: No one else, okay.
21 Mr. Brown? Ms. Forster? They have no questions. That
22 completes cross-examination. Do you have any redirect?

23 MR. ETHERIDGE: I just have a couple of questions
24 on redirect for Mr. Nuzum on entrainment.

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REDIRECT EXAMINATION EAST BAY MUNICIPAL UTILITY DISTRICT

BY FRED ETHERIDGE

MR. ETHERIDGE: As I understand it and it could be a broad term, under cross-examination you were asked about entrainment of juvenile salmon against screenings on the Delta Wetlands's diversions. Is that also called "impingement"?

MR. NUZUM: If they would actually end up on the screen it's an impingement, yes.

MR. ETHERIDGE: But is it your testimony and your opinion that the Delta Wetlands diversions to storage could attracts juvenile salmon to those facilities?

MR. NUZUM: Yes.

MR. ETHERIDGE: On the issue of olfactory cue, I believe the gist of the question on cross-examination was that the Mokelumne River is a small percentage of the total Delta inflow and that the Mokelumne River's waters -- excuse me, are distributed to various places in the Delta.

But isn't it your testimony that the storage by Delta Wetlands of Mokelumne River water on the project island and later release of that water simply adds to the complexity of the Delta, it adds Mokelumne River scents as it were, to other places in the Delta?

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1 MR. NUZUM: Yes --

2 MR. ETHERIDGE: So -- go ahead.

3 MR. NUZUM: That's the concern.

4 MR. ETHERIDGE: So that it has the potential of
5 adding to the confusion of returning adult chinook
6 salmon?

7 MR. NUZUM: Right.

8 MR. ETHERIDGE: Okay. And also is it true as to
9 the issue of adult returning salmon, I understood you to
10 say that some salmon migrate directly straight up the
11 river and some may linger for some period in the Delta;
12 is that true?

13 MR. NUZUM: Yes, that's true. And they could --
14 they can stray to other systems as well, right.

15 MR. ETHERIDGE: Is it part of your concern as to
16 those adult salmon who are delayed in the Delta because
17 they may become confused that that could have impacts on
18 their eggs, or their spawning capacity?

19 MR. NUZUM: Yes, it could have.

20 MR. ETHERIDGE: Okay. Okay. Thank you. Those are
21 all my questions.

22 HEARING OFFICER STUBCHAER: Okay. Thank you.
23 Anyone wish to ask recross questions on this redirect?
24 Staff? Seeing none. All right. Would you like to move
25 the exhibits?

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1 MR. ETHERIDGE: Yes. I'd like to move EBMUD
2 Exhibit 1, which is the qualifications of Mr. Nuzum;
3 EBMUD Exhibit 2, the qualifications of Mr. Bowen; and
4 EBMUD Exhibit 3 the testimony of Mr. Nuzum; and EBMUD
5 Exhibit 4 the testimony of Mr. Bowen be admitted into
6 evidence.

7 HEARING OFFICER STUBCHAER: Any objections?
8 Hearing none they are accepted into evidence. Thank you
9 very much.

10 MR. ETHERIDGE: Thank you very much, Mr. Stubchaer.

11 HEARING OFFICER STUBCHAER: Mr. Turner, does your
12 witness happen to be here yet, I know it's not 3:00? I
13 just thought I'd ask.

14 MR. TURNER: Yes, as a matter of fact, Mr. Ploss
15 has shown up.

16 HEARING OFFICER STUBCHAER: Oh, hi. I didn't see
17 you sitting next him. Are you ready to go now?

18 MR. TURNER: That would be fine, certainly.

19 HEARING OFFICER STUBCHAER: All right.

20 HEARING OFFICER STUBCHAER: Has Mr. Ploss taken the
21 oath?

22 MR. PLOSS: No.

23 HEARING OFFICER STUBCHAER: Stand and we'll get
24 you.

25 MR. PLOSS: All right.

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1 HEARING OFFICER STUBCHAER: Please raise your right
2 hand. You promise to tell the truth in this proceeding?

3 MR. PLOSS: Yes.

4 HEARING OFFICER STUBCHAER: Thank you. Please, be
5 seated.

6 MR. TURNER: James Turner attorney for the Bureau
7 of Reclamation. As we discussed yesterday Mr. Schulz,
8 the attorney for the State Water Contractors, had not
9 been available when Mr. Ploss's written testimony,
10 qualifications, and stipulation with Delta Wetlands had
11 been admitted. And he had requested the opportunity to
12 present some questions to the Bureau witness Lowell Ploss
13 with respect to his testimony and the stipulations. So
14 we agreed to make Mr. Ploss available.

15 He is available at this point in time. And I
16 would presume that there would be no reason to have him
17 present any direct, since his statement has already been
18 introduced and I'll just make him available for
19 cross-examination to Mr. Schulz who had requested that
20 opportunity.

21 HEARING OFFICER STUBCHAER: All right. Who wishes
22 to cross-examine Mr. Ploss? One, two, three, four. All
23 right, we'll go down the usual order. Delta Wetlands, do
24 you want to go first, or --

25 MS. SCHNEIDER: I'd love to go last.

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1 MR. TURNER: Excuse me, Mr. Stubchaer.

2 HEARING OFFICER STUBCHAER: I've come to realize
3 that.

4 MR. TURNER: Excuse me, for a moment,
5 Mr. Stubchaer?

6 HEARING OFFICER STUBCHAER: Yes.

7 MR. TURNER: I noticed you just asking who else was
8 interested in presenting cross-examination questions, as
9 I recall when we made the presentation of Mr. Ploss's
10 testimony, qualifications statements, stipulations all
11 the other parties waived any desire to cross-examine
12 Mr. Ploss. And, consequently, we presented no summary of
13 his direct testimony.

14 And now the other parties are going to be given
15 the opportunity on second-thought to present
16 cross-examination. I thought this was solely for the
17 purpose of Mr. Schulz who was not available at the time
18 that the testimony was introduced.

19 HEARING OFFICER STUBCHAER: That's an interesting
20 point, but I think if one is going to ask, we have to
21 allow the others to do it.

22 MR. TURNER: Okay. Thank you.

23 HEARING OFFICER STUBCHAER: Ms. Schneider.

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1 CROSS-EXAMINATION OF THE U.S. DEPARTMENT OF THE INTERIOR

2 BY DELTA WETLANDS PROPERTIES

3 BY ANNE SCHNEIDER

4 MS. SCHNEIDER: Good afternoon, Mr. Ploss.

5 MR. PLOSS: Good afternoon.

6 MS. SCHNEIDER: Are you familiar with the proposed
7 Delta Wetlands Project?

8 MR. PLOSS: Yes, I am.

9 MS. SCHNEIDER: Were you provided information and
10 documents related to Delta Wetlands's operations and
11 potential operations including what we call the Delta
12 Wetlands OCAP, the operating criteria plan prepared by
13 Mr. Paff and others?

14 MR. PLOSS: Yes, I was.

15 MS. SCHNEIDER: And did you have discussions and
16 meetings with representatives from Delta Wetlands
17 including John Paff regarding Delta Wetlands's operations
18 plan and criteria?

19 MR. PLOSS: Yes. The Bureau met, I think, on two
20 occasions if I recall.

21 MS. SCHNEIDER: And did you make comments on the DW
22 OCAP?

23 MR. PLOSS: Yes. We provided comments to Mr. Paff.

24 HEARING OFFICER STUBCHAER: Mr. Ploss, could you
25 get the mic a little closer.

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1 MR. PLOSS: A little closer. All right.

2 HEARING OFFICER STUBCHAER: Thanks.

3 MS. SCHNEIDER: In your discussions did you
4 indicate that in your view if Delta Wetlands were in
5 existence during the drought period it could have
6 assisted in transfers, or water banking, or Delta
7 operation as well as being a potential new water supply
8 in this State?

9 MR. PLOSS: I don't recall we made those specific
10 statements.

11 MS. SCHNEIDER: Did you help prepare -- or did you
12 prepare the stipulation for dismissal of the
13 Reclamation's protest that was submitted to this Board on
14 July 2nd, I believe?

15 MR. PLOSS: Yes, I did.

16 MS. SCHNEIDER: Is it accurate that within that
17 stipulation the Bureau indicates that it would make a
18 statement to the Water Resources Control Board related to
19 the positive opportunities that the Delta Wetlands
20 Project could afford?

21 MR. PLOSS: We made a statement to that affect,
22 yes.

23 MS. SCHNEIDER: Do you wish to make that statement?

24 MR. PLOSS: I think it's covered adequately in our
25 testimony that Delta Wetlands could be beneficial for

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1 water supplies.

2 MS. SCHNEIDER: Thank you. That's my only
3 question.

4 MR. PLOSS: Thank you.

5 HEARING OFFICER STUBCHAER: Thank you. Let's see
6 Mr. Moss -- I don't remember your hand.

7 MR. MOSS: No.

8 HEARING OFFICER STUBCHAER: Would you raise your
9 hands, again, please. Mr. Maddow, Mr. Nomellini --
10 Mr. Nomellini, you're next.

11 ----oOo----

12 CROSS-EXAMINATION OF THE DEPARTMENT OF THE INTERIOR

13 BY CENTRAL DELTA WATER AGENCIES

14 BY DANTE NOME LLINI

15 MR. NOME LLINI: For the record, I'm Dante John
16 Nomellini with the Central Delta Water Agency and the
17 other Central Delta parties.

18 Mr. Ploss, is it contemplated by the Bureau that
19 if this project were approved that water could be
20 purchased for delivery to the west side of the San
21 Joaquin Valley that it drains into the San Joaquin River?

22 MR. PLOSS: That could be a potential use of the
23 water from Delta Wetlands.

24 MR. NOME LLINI: Thank you.

25 HEARING OFFICER STUBCHAER: Thank you,

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1 Mr. Nomellini.

2 MR. PLOSS: I'm disappointed.

3 HEARING OFFICER STUBCHAER: Don't be. Mr. Maddow.

4 ---oOo---

5 CROSS-EXAMINATION OF THE DEPARTMENT OF THE INTERIOR

6 BY CONTRA COSTA WATER DISTRICT

7 BY ROBERT MADDOW

8 MR. MADDOW: Thank you. I'm Robert Maddow
9 appearing on behalf of the Contra Costa Water District.

10 Good afternoon, Mr. Ploss.

11 MR. PLOSS: Good afternoon.

12 MR. MADDOW: Your testimony a moment Delta
13 Wetlands -- in response to the question by Ms. Schneider
14 was Delta Wetlands could be beneficial for water supply.
15 We've been reviewing the stipulation and our question is
16 whether or not you think that your statement encompasses
17 whether or not the Delta Wetlands Project would be
18 beneficial from a water quality perspective?

19 MR. PLOSS: I believe our testimony reads that
20 Delta Wetlands could be beneficial if it's operated
21 under, you know, adequate protections and conditions that
22 the Board may impose.

23 MR. MADDOW: From the perspective of the Bureau,
24 then, in regard to your customers who purchase water from
25 the Bureau for M&I purposes, how do you envision the

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1 water quality protections to work in light of your
2 stipulation and the dismissal of your protest?

3 MR. PLOSS: If your reference is to the quality of
4 water for M&I use we did not evaluate that. I believe
5 that was evaluated by others who are testifying here.

6 MR. MADDOW: And, finally, I'm trying to make sure
7 that we fully understand Exhibit A and Exhibit B that are
8 attached to the stipulation. And I guess I'll try and do
9 it with just a couple of questions. I want to make sure
10 I understand it.

11 From USBR's perspective if you are required to
12 alter your operations with regard to either making water
13 available for the 800,000 acre feet for the Central
14 Valley Project Improvement Act flows, or for the
15 anadromous fish restoration flows, or something of that
16 nature, would Delta Wetlands divert any of that water?

17 MR. PLOSS: At this point I really -- I really
18 could not address that. It has not been analyzed if
19 we're releasing water from, say, upstream reservoirs
20 whether or not that water would be available for
21 diversion into the Delta Wetlands.

22 That's a matter that's still under consideration
23 by the Department of Interior as to how the actual flow
24 of the 800,000 acre feet would be treated.

25 MR. MADDOW: So it's your testimony that it's -- at

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1 least at this point, at least theoretically it's possible
2 that you would release water for one of the two examples
3 I used either CVPIA, or AFRP and Delta Wetlands could
4 divert that water?

5 MR. PLOSS: Under current conditions with the
6 operation of the project and release of water under CVPIA
7 the water becomes available for diversions for others
8 diversion by others, yes.

9 MR. MADDOW: I think I'll stop there,
10 Mr. Stubchaer.

11 HEARING OFFICER STUBCHAER: Thank you. Who else
12 besides Mr. Schulz? Mr. Schulz -- Mr. Schulz, how long
13 is your examination going to take?

14 MR. SCHULZ: 10, 15 minutes.

15 HEARING OFFICER STUBCHAER: All right. We will
16 take our break now, then, and reconvene in 12 minutes.

17 MR. SCHULZ: Okay.

18 (Recess taken from 2:48 p.m. to 3:02 p.m.)

19 HEARING OFFICER STUBCHAER: Okay. We'll reconvene
20 the hearing. Mr. Schulz.

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CROSS-EXAMINATION OF THE DEPARTMENT OF THE INTERIOR

BY THE STATE WATER CONTRACTORS

BY CLIFF SCHULZ

MR. SCHULZ: Yes. Cliff Schulz for the State Water Contractors. Mr. Ploss, I heard your earlier testimony in response to -- I forget who's question. You indicated that the statement that you have on page -- the first page of your stipulation.

It says it could provide -- it being the Delta Wetlands Project, could provide opportunities for additional water management, environmental benefits, and improve the efficiency of Bay-Delta water operations was premised on the assumption that there was an adequate operations agreement, or terms and conditions imposed by the Board on the operations of the Board; is that correct?

MR. PLOSS: That's correct.

MR. SCHULZ: In that regard it would seem to me that we would have to look a little bit at your Exhibit B to the stipulation which talks about an execution of a formal agreement with the United States Bureau of Reclamation, Department of Water Resources to Delta Wetlands for surplus Delta export pumping capacity at the State Water Project and Central Valley Project pumping

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1 plants and incorporating operations coordination
2 procedures consistent with the Delta Wetlands operating
3 criteria and plan, Endangered Species Act, et cetera.

4 Is there any such agreement at this time?

5 MR. PLOSS: No, there is not.

6 MR. SCHULZ: Has there been any commencements of
7 negotiations towards any such agreement?

8 MR. PLOSS: No, there has not.

9 MR. SCHULZ: Can you describe to me what you view
10 such an agreement would look like? In other words, what
11 did the Bureau visualize in terms of when it made that
12 statement in that Exhibit B?

13 MR. PLOSS: What we have visualized is first you
14 have two projects already existing in the Delta, export
15 projects: Central Valley Project and the State Water
16 Project. And in viewing the Delta Wetlands Project that
17 will be a third major project right in the vicinity of
18 the export facilities. We feel that there is a need for
19 an agreement on how the three parties will coordinate
20 operations both for export and for diversions under the
21 Delta Wetlands Project and how the three projects will
22 operate in concert.

23 MR. SCHULZ: In your Exhibit B it says: No
24 discharge for export shall be made until the execution of
25 such a formal agreement.

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1 So is it your understanding that the Delta
2 Wetlands could construct and begin filling the reservoirs
3 prior to the execution of such an agreement?

4 MR. PLOSS: It's our belief that that could be the
5 potential with the actions of Board and other appropriate
6 actions that have to take place. But I think I'll direct
7 you to Exhibit A that also requires -- at least our
8 request in the stipulation and the testimony before the
9 Board is that we have a modified term 91, which would
10 then have control on the diversion of water by the
11 project.

12 MR. SCHULZ: If I'm correct in your discussions
13 with Mr. Maddow you indicated that in doing Exhibit A, or
14 Exhibit B you were not considering the impact of such
15 operations on municipal water quality issues. Is that
16 correct?

17 MR. PLOSS: That's correct.

18 MR. SCHULZ: Now, returning to Exhibit B, you talk
19 about for surplus Delta export pumping capacity at the
20 State Water Project and Central Valley Project pumping
21 plants. You weren't here, I don't believe, right, on
22 cross-examination when I -- I asked a series of questions
23 to the Delta Wetlands witnesses in which they indicated
24 that, yes, they were planning on utilizing the State and
25 Federal pumping plants and conveyance facilities to move

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1 the water to the place of use. But, no, not necessarily
2 were they assuming the State Project, or the CVP would be
3 the buyers of that water.

4 So it could be, for example, a group of farmers
5 down in Madera or Merced Counties, or the City of San
6 Diego, or San Diego Water Authority, whatever you
7 might -- in other words, it could be an entity who is not
8 the SWP, or CVP. And I'm going to ask you some
9 questions, if you don't mind, that would assume that the
10 Bureau is not the buyer. That it could be -- it could be
11 the State Project, I assume, or it could be third parties
12 unknown at this time, because there are no buyers at this
13 time.

14 And would you describe for me the procedures
15 that the Bureau uses under those circumstances which
16 would allow them to provide surplus Delta export pumping
17 capacity at the CVP pumping plant? What is the process
18 here?

19 MR. PLOSS: That would require what we term a
20 Warren Act contract, or the conveyance, or wheeling of
21 third-party water through Federal facilities.

22 MR. SCHULZ: What is the authority, right now of
23 the United States to enter into long-term Warren Act
24 contracts for moving third-party water?

25 MR. PLOSS: In the term of a long-term agreement

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1 the authority has to come from the Commissioner of the
2 Bureau of Reclamation.

3 MR. SCHULZ: Absent that authority right now is
4 there a moratorium on long-term Warren Act contracts?

5 MR. PLOSS: We do not have moratorium on long-term
6 contracts. The authority rests with the Commissioner to
7 enter into long-term Warren contracts. The local
8 authority is for a one-year contract.

9 MR. SCHULZ: Are you aware of any long-term Warren
10 Act contracts in this area?

11 MR. PLOSS: I'm not aware of any.

12 MR. SCHULZ: In a Warren Act contract with a
13 third-party, what is the priority of that third party
14 with respect to capacity?

15 MR. PLOSS: The priority for third-party water
16 would follow water needed for any purposes of the Central
17 Valley Project.

18 MR. SCHULZ: In other words, the lowest priority?

19 MR. PLOSS: In other words, the lowest priority.

20 MR. SCHULZ: You're familiar, of course, with the
21 capacity constraints on the Tracy pumping plant for the
22 DMC, right?

23 MR. PLOSS: Yes.

24 MR. SCHULZ: In your opinion as we sit here today
25 with the adaptive management that's going on under the

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1 Accord, water quality standards, and water rights and
2 make up water, and what you need to do in order to move
3 water to San Luis in the circle of San Luis Unit and the
4 DMC contractors, what's your view on how much firm
5 capacity that the Tracy pumping plant and the DMC could
6 provide to the Delta Project?

7 MR. PLOSS: Operating under the conditions that we
8 have had for the past three years my opinion would be we
9 have limited, or no capacity available outside of that
10 for the Central Valley Project.

11 MR. SCHULZ: Would you agree with me that it's most
12 likely if any capacity exists in order to move this Delta
13 Wetlands water that it would have to be through the State
14 facilities, a vast majority?

15 MR. PLOSS: I would say the likelihood of any
16 capacity through the Tracy pumping plant does not exist.

17 MR. SCHULZ: Thank you. That's all I have.

18 HEARING OFFICER STUBCHAER: Thank you, Mr. Schulz.
19 Ms. Murray.

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21 CROSS-EXAMINATION OF THE DEPARTMENT OF THE INTERIOR

22 BY THE DEPARTMENT OF FISH AND GAME

23 BY NANCEE MURRAY

24 MS. MURRAY: Mr. Ploss, your stipulation states
25 that you will make a statement regarding the fact that

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1 this project could provide opportunities for, among other
2 things, environmental benefits. That's subsection two in
3 your stipulation.

4 And I think I heard you testify earlier that
5 rather -- that basically the statement for that was your
6 direct testimony that you had previously submitted; is
7 that correct?

8 MR. PLOSS: That's correct.

9 MS. MURRAY: I could not find in just quickly
10 rereading your testimony now any -- any reference in here
11 to environmental benefits. Could you point to me where
12 environmental benefits are referenced, and what those
13 environmental benefits are?

14 MR. PLOSS: In the concluding statement, concluding
15 paragraph. If you want I will read. It says,
16 "Reclamation recognizes the Delta Wetlands Project as a
17 potential to augment water supplies; provide
18 environmental enhancement; and support more efficient
19 management for the Delta and its resources."

20 MS. MURRAY: And what's the basis for that
21 conclusion?

22 MR. PLOSS: This is a conclusion based on operation
23 of the Central Valley Project that the availability of a
24 project such as the Delta Wetlands, or other projects
25 could be used under proper conditions and terms to

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1 provide additional water supplies, or enhancements to the
2 environment.

3 MS. MURRAY: And as you told Mr. Schulz you don't
4 know at this time what those permit conditions and terms
5 are and you really have no opinion and are not presenting
6 testimony on that, but you're leaving it to this Board to
7 make those proper conditions and terms in order for the
8 project to have some environmental benefit?

9 MR. PLOSS: That's correct.

10 MS. MURRAY: Okay. And without those permit
11 conditions and terms by this Board there could be an
12 environmental loss in that you previously said CVPIA
13 water could be rediverted by Delta Wetlands; is that
14 correct?

15 MR. PLOSS: I can't make any judgment on that.

16 MS. MURRAY: Okay. But in order to prevent that
17 there might be some condition required by this Board --
18 never mind -- strike that.

19 Thank you. That's all.

20 HEARING OFFICER STUBCHAER: Okay. Staff?

21 Mr. Brown?

22 MEMBER BROWN: I have nothing.

23 HEARING OFFICER STUBCHAER: Ms. Forster?

24 BOARD MEMBER FORSTER: No.

25 HEARING OFFICER STUBCHAER: I have one question.

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1 Is there a long-term Warren Act contract at Cachuma? I
2 know that's not in this Delta area, but --

3 MR. PLOSS: I don't know for certain. Maybe our
4 Counsel here does know.

5 MR. TURNER: The fact is, yes. Yes, there is.

6 HEARING OFFICER STUBCHAER: Okay. That's good,
7 because they just dedicated the Coastal Aqueduct Friday
8 and it's suppose to go through Cachuma to wheel the water
9 to the pumps. Okay. I think we previously accepted
10 these things into evidence.

11 Do we need to do that again, Ms. Leidigh?

12 MS. LEIDIGH: I believe we did. Just a moment. Do
13 you have it down?

14 MR. SUTTON: We can do that, again, if you want to
15 make sure. We got the numbers straightened around
16 yesterday.

17 MR. TURNER: Right.

18 MS. LEIDIGH: Not yesterday, last week.

19 MR. TURNER: If not I would reintroduce Bureau of
20 Reclamation Exhibits 1, 2, and 3 for the record.

21 HEARING OFFICER STUBCHAER: I guess we'll re-accept
22 them.

23 MS. LEIDIGH: I think that's proper.

24 HEARING OFFICER STUBCHAER: All right. Thank you
25 for attending.

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1 Next will be the direct testimony of the
2 Department of Water Resources, Ms. Crothers and your
3 panel.

4 THE COURT REPORTER: Mr. Stubchaer, may I write
5 their names down real quick?

6 HEARING OFFICER STUBCHAER: Yes.

7 (Off the record.)

8 HEARING OFFICER STUBCHAER: Back on the record.
9 Ms. Crothers.

10 ----oOo----

11 OPENING STATEMENT OF THE DEPARTMENT OF WATER RESOURCES

12 BY CATHY CROTHERS

13 MS. CROTHERS: Good afternoon, Mr. Stubchaer. My
14 name is Cathy Crothers, Staff Counsel for the Department
15 of Water Resources. DWR as the operator of the State
16 Water Project and holder of water rights in the Delta
17 desires to protect its interests from adverse impacts
18 which potentially could be caused by the operations of
19 the Delta Wetlands Project.

20 Also, however, because of the Department of
21 Water Resources responsibilities with respect to State
22 planning for development of water resources, DWR is
23 interested in the potential for Delta Wetlands to operate
24 as an effective water supply in the public interest.

25 To address these areas, DWR's testimony consists

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1 of comments regarding any potential impacts the project
2 could have on State Water Project water rights, water
3 quality, fishery resources, and levee stability. DWR
4 testimony is based on the review of the Delta Wetlands
5 1995 Draft EIR/EIS; the 1997 Delta Wetlands Project
6 operations criterion plan now known as the OCAP.

7 At the time we submitted our testimony, we were
8 reviewing a draft of that, however, there's a final
9 version now. And, also, we reviewed the biological
10 opinions issued by Fish and Wildlife Service and National
11 Marine Fishery Service for the Delta Wetlands Project.
12 And we also had meetings and conversations with
13 representatives of Delta Wetlands.

14 The Department's major concern is protection of
15 the State Water Project's water rights and operation of
16 the State Water Project free of interference by Delta
17 Wetlands. The Delta Wetlands OCAP submitted to the Board
18 states that the Delta Wetlands will operate its project
19 to not interfere with senior water rights as well as to
20 be consistent with the 1995 Water Quality Control Plan,
21 also the Bay-Delta Accord, and the biological opinions
22 issued to it and any conditions imposed by the Board.

23 The OCAP proposes limitations on diversions and
24 discharges of the Delta Wetlands Project. Although these
25 limitations are extensive, we do not believe they address

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1 specific operational concerns of the State Water Project.
2 To develop appropriate conditions that would protect the
3 State Water Projects water rights, its operations, and
4 maintain a continued water supply reliability of the
5 State Water Project, DWR met with the Delta Wetlands
6 representatives. And we have reached an agreement and
7 stipulated to terms and conditions that we can recommend
8 to the Board to include in any water rights permit that
9 the Board should grant to the Delta Wetlands Project.

10 This stipulation includes conditions similar to
11 conditions that I proposed in a written opening statement
12 that I submitted to the Board in June. These are
13 conditions are similar and I'll explain where they have
14 changed, but what I'd like to do is just read into the
15 record the stipulation.

16 HEARING OFFICER STUBCHAER: And with the
17 stipulation, would you then still present your direct
18 testimony, or would this make that unnecessary?

19 MS. CROTHERS: Mr. Stubchaer, we would still
20 present our direct testimony. It would be somewhat
21 abbreviated. Some of the areas wouldn't need to be
22 explained as completely, but we do have other concerns
23 related to our role as the agency involved with planning
24 of State water resource development, and also because of
25 our activities in the Delta related to levees. So there

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1 are other issues that are somewhat separate.

2 HEARING OFFICER STUBCHAER: Okay. That's fine.

3 MS. CROTHERS: So I would like to read the
4 stipulation into the record, if that's all right.

5 HEARING OFFICER STUBCHAER: Yes.

6 MS. CROTHERS: This is a stipulation between Delta
7 Wetlands Properties and the Department of Water
8 Resources:

9 The Delta Wetlands Properties and the Department
10 of Water Resources hereby agree to the terms and
11 conditions shown below with respect to the Delta Wetlands
12 Project on Webb Tract, Bacon Island, Bouldin Island, and
13 Holland Track.

14 Delta Wetlands and Department of Water Resources
15 also agree to present these terms and conditions to the
16 State Water Resources Control Board at the July 1997
17 hearing on DW water rights applications numbers 29061,
18 29062, 29063, 29066, 30268, 30269, and 30270, and
19 requests the Board includes these terms in any water
20 rights permits should the Board issue water rights
21 permits for the party.

22 The parties wish to clarify that the first
23 sentence of Condition Number One generally prohibits
24 diversions by DW which adversely affect the operations of
25 the State Water Project and Central Valley Project

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1 whether or not Sub (a) or Sub (b) of Condition 1 apply.
2 Sub (a) and Sub (b) set forth two particular instances in
3 which the adverse effect on project operations would be
4 presumed to exist.

5 The parties recognize and agree that the
6 determination of balanced and excess water conditions in
7 the Delta by the USBR and DWR referred to in Conditions 1
8 and 2 includes operational buffers, i.e., operation to
9 better than a particular Delta requirement to make
10 reasonable provision for operational uncertainties and a
11 margin of safety to assure project compliance with Delta
12 requirements.

13 The parties also recognize and agree that Delta
14 Wetlands Project operations may at times be a factor,
15 along with other factors such as tides, winds, and
16 tributary flows that affects the level of operational
17 uncertainty for the SWP and CVP and hence may affect the
18 amount of buffer included by the USBR and DWR in their
19 determinations of balanced and excess conditions.

20 Terms and conditions:

21 One, no diversion is authorized that would
22 adversely affect the operation of the Federal Central
23 Valley Project, or the State Water Project under permits
24 and licenses for these projects as they exist at the time
25 of this Order and as they may be amended from time to

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1 time.

2 An adverse effect shall be deemed to result from
3 permittee's diversion when:

4 A, the USBR and the DWR have declared the Delta
5 to be in balanced water conditions under the coordinated
6 operation Agreement; or B:

7 At any other time the diversion would directly,
8 or indirectly require the CVP, or the SWP to release
9 water from storage or reduce their diversion, or
10 redirection of water from the Delta in order to provide
11 or assure flow, or water quality in the Delta to meet any
12 applicable Federal or State law, or mandate.

13 Two, when USBR and DWR have declared the Delta
14 to be in excess water conditions under the COA, no
15 diversion is authorized by permittee greater than the
16 amount of excess water available as reasonably calculated
17 by USBR and DWR.

18 Three, permittee shall curtail or cease
19 discharges from Delta Wetlands reservoirs which would
20 directly, or indirectly require operations of the SWP, or
21 CVP to be modified to meet any applicable Federal, or
22 State law or mandate.

23 Thank you for your patience in reading that into
24 the record. I think it was important to kind of let
25 everybody understand what it was we have agreed to

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1 specifically, so there's no question about it.

2 MEMBER BROWN: Mr. Chairman --

3 HEARING OFFICER STUBCHAER: Just a moment.

4 Ms. Forster has a question she would like to ask.

5 BOARD MEMBER FORSTER: I think I heard everything
6 you said, but the -- when you're talking about applicable
7 laws, Federal and State laws, you're talking about the
8 Safe Drinking Water Act also?

9 MS. CROTHERS: Well, if we are -- if we have a
10 requirement under Safe Drinking Water relate to our water
11 rights in operation, if they apply to those operations,
12 specifically to DWR, that would be something we would be
13 operating to.

14 BOARD MEMBER FORSTER: I don't know if you have
15 those requirements, or the people who contract with you
16 have those requirements and what your liability is.

17 MS. CROTHERS: Actually, that's kind of a question
18 that I can't answer. It's a legal issue that probably
19 will be discussed in detail at some point.

20 HEARING OFFICER STUBCHAER: Who's going to discuss
21 legal issues if our commit --

22 MS. CROTHERS: Well, I'm not prepared to discuss it
23 right now.

24 HEARING OFFICER STUBCHAER: Okay.

25 BOARD MEMBER FORSTER: I never thought about this

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1 before. Is DWR -- does DWR not have any responsibility
2 for the quality of the water they deliver to their
3 contractors --

4 MS. CROTHERS: We have --

5 BOARD MEMBER FORSTER: -- besides -- besides the
6 Water Quality Control Plan for Bay-Delta?

7 MS. CROTHERS: We have contractual provisions that
8 we have with our water contractors that do go into some
9 water quality requirements. And I don't know the details
10 of those contracts. I haven't really worked on them.
11 But we do have some water quality requirements we have to
12 meet contractually to the customers. In the terms of
13 the Safe Drinking Water Act, those regulations really go
14 towards the providers of the drinking water, the
15 treatment operators, and they don't apply to DWR.

16 HEARING OFFICER STUBCHAER: Mr. Brown.

17 BOARD MEMBER BROWN: The stipulations of how much
18 water you can divert when and where could be determined
19 by the Department of Water Resources and the Bureau of
20 Reclamation appears to be more of a responsibility of
21 this Board. I was wondering from staff if they have any
22 comments on this. Our staff, Barbara?

23 MS. LEIDIGH: I'm not sure that I have anything
24 that I can really say right now. Do you have any --

25 BOARD MEMBER BROWN: Jim --

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1 MS. LEIDIGH: -- verification of what you mean.

2 HEARING OFFICER STUBCHAER: Can you restate the
3 question, Mr. Brown?

4 MS. LEIDIGH: Yeah.

5 BOARD MEMBER BROWN: The stipulation that you're
6 agreeing to, the Department and the Bureau of
7 Reclamation, as to make the determination of the
8 quantities when they can and cannot be diverted appears
9 to be more of a responsibility of this Board rather than
10 those two agencies.

11 MS. LEIDIGH: Well, DWR and the Bureau do
12 calculations to determine when the Delta is in balance
13 condition. And I think that what they're really doing
14 is -- is establishing an agreement between parties to
15 eliminate any conflict between those parties at a level
16 before it gets to the Board.

17 If they did not have that kind of an agreement,
18 any dispute between them as to whether or not there was
19 water available would come immediately to the Board
20 rather than having a mechanism for the parties to resolve
21 it among themselves.

22 Ultimately, yes, it does come to the Board if
23 there's a dispute that can't be resolved as to whether or
24 not there is water available in the Delta. But if
25 parties can come to some agreement on a realtime basis as

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1 to whether there's water available, then the Board
2 doesn't have to resolve the dispute.

3 Yeah, ultimately, it is the Board's call. And
4 the Board can set down rules in addition to whatever they
5 might have if it wants to -- to assist in any
6 determination, or it will lay down what the rules are on
7 when there's water available.

8 HEARING OFFICER STUBCHAER: Mr. Cornelius.

9 BOARD MEMBER BROWN: Thank you.

10 MR. CORNELIUS: In my familiarity it would appear
11 to be more of a realtime operation and more like a
12 special master, or trial distribution program like we
13 have on Napa where they do within certain limits what is
14 needed to protect prior rights. And when they get in
15 trouble, it comes back to us. But there are limits and
16 there are certain delegation you know, like the trial
17 distribution that has gone on for years that DWR provides
18 the water master for -- to administer. But this would
19 require some kind of supplemental agreement, or other
20 thing later on to implement it, or to be briefed, or
21 something.

22 HEARING OFFICER STUBCHAER: Okay. Mr. Brown,
23 anything else?

24 BOARD MEMBER BROWN: No, that's fine.

25 HEARING OFFICER STUBCHAER: Okay.

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1 MS. CROTHERS: I have one comment on that. Right
2 now the DWR and the Bureau do use the calculation of
3 balance conditions that we use through the COA to -- when
4 we -- when the Board needs to invoke the term 91 they
5 rely on the Department and the Bureau right now to
6 perform a calculation which then Term 91 becomes
7 effective under.

8 So in a way it's similar to that we provide
9 calculations based on our realtime data collection in our
10 operation center. And we use that information for
11 implementing things. And that's what the point was, it's
12 a method of getting to implementation, I guess.

13 BOARD MEMBER BROWN: I understand if you're talking
14 about just implementing what is -- what is prescribed in
15 this. That's fine.

16 MS. CROTHERS: I'd just like to review a little bit
17 of the conditions. Condition one is the same condition,
18 actually, that the Delta Wetlands and the Bureau have
19 stipulated to already. It's the Los Vaqueros term that
20 was issued in Decision 1629 by the Board to protect the
21 State Water Project and CVP from the Contra Costa Water
22 Districts diversions for Los Vaqueros.

23 In addition to that term, that some people term
24 special Delta term -- well, the special Delta term is a
25 general provision to say, no, you can't impact a senior

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1 right water user, DWR and the Bureau. And also it sets
2 forth two presumptions of when an adverse affect would
3 occur. And one of the those is when water conditions are
4 in a balance conditions are in affect then no diversions
5 by the junior water right holder is permitted, because
6 that would be an impact to State Water Project
7 operations.

8 And that is because at this time, as you know,
9 DWR and the Bureau are solely responsible for meeting the
10 water quality requirements in the Delta. And because of
11 that special role we play and -- in essence, our
12 operations end up controlling much of how the Delta
13 compliance is met. We need these protections against our
14 stored water and our exports abilities.

15 Because of the potential for Delta Wetlands to
16 divert discharge large volumes of water and high rate of
17 water near the State Water Project, or CVP intakes we've
18 also imposed a Condition 2 which would state that DWR and
19 the Bureau determine when the excess -- excess water is
20 available. And it is because of that potential impact
21 they are a large diverter/discharger that we need this
22 additional term.

23 When the period of time is -- when we have
24 excess conditions that are large volumes, excess large
25 Delta outflow we don't have a concern. But it's when --

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1 we're near the times when balance conditions could easily
2 occur, the Delta Wetlands's operations by itself could
3 move the Delta into a balance condition when, otherwise,
4 it may not happen.

5 And so we propose that it's somewhat like a
6 buffer that we are recognizing Delta Wetlands as an
7 additional factor that we must include in our
8 calculations of buffer and excess conditions that enable
9 us to operate reliably.

10 And the last proposed term protects the State
11 Water Project operations from impacts caused by Delta
12 Wetlands discharges. It would prohibit the Delta
13 Wetlands from releasing discharges that adversely effect
14 State Water Project operation.

15 However, the third term of the stipulation does
16 not purport to address any potential impacts from the
17 Delta Wetlands operations with respect to drinking water
18 quality issues. Because of the uncertainties with
19 specific future operations related to uses of the Delta
20 Wetlands water, DWR requests that the Board as part of
21 any water rights it may issue for the Delta Wetlands
22 Project, reserve jurisdiction over the project. Another
23 issue which I will address in --

24 BOARD MEMBER BROWN: Mr. Chairman --

25 MS. CROTHERS: -- closing brief will address the

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1 issue of the topping off that the OCAP proposes a plan
2 for using existing riparian appropriated water rights for
3 replacement of water evaporated from the reservoirs. I
4 assume the Board will address some of these topping-off
5 issues sometime during this hearings.

6 HEARING OFFICER STUBCHAER: Excuse me, Ms.
7 Crothers. Mr. Brown.

8 BOARD MEMBER BROWN: Ms. Crothers, in your
9 determination, do you have considerations in there for
10 other senior right holders?

11 MS. CROTHERS: The determination for excess
12 conditions?

13 BOARD MEMBER BROWN: Yes.

14 MR. GAGE: Might be --

15 MS. CROTHERS: I think Mr. Gage when he discusses
16 his area he will address some of this. But under the COA
17 we consider the balance condition to occur when we're
18 having to meet in-basin uses. And so all in-basin uses
19 first are -- are a factor in what a balance condition in
20 the Delta is. And the opposite, I guess you might say,
21 is when excess conditions are occurring there's
22 sufficient outflow to allow us to export and not be
23 having to be using our stored water, our exports to meet
24 in-basin uses.

25 So I think that what you're saying it's in

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1 there, it's factored in there, the senior water right
2 use, riparian water right use, they're all in-basin uses
3 that are already considered.

4 BOARD MEMBER BROWN: All right. Thank you.

5 HEARING OFFICER STUBCHAER: Okay. I think some of
6 the answers to your questions will come out later in the
7 testimony, also. All right --

8 MS. CROTHERS: That concludes my opening statement.
9 And before we begin our direct testimony I would like to
10 take care of a few administrative matters.

11 On June 24th I made a request to the Board to
12 add Mr. Marvin Jung to our panel of expert witnesses for
13 purposes of cross-examine. And I would like to know if
14 the Board would find that acceptable to include him as
15 part of our panel for cross-examine.

16 And, also, we have two additional DWR staff that
17 work in the Delta and because of some of the issues that
18 have come out during the cross-examine, I've asked that
19 they be available today in case anybody had some
20 questions of DWR related to Delta levees and the Suisun
21 Marsh salinity requirements. Those people are
22 Dave Lawson and Kamyar Guivetchi.

23 HEARING OFFICER STUBCHAER: And they're present
24 here?

25 MS. CROTHERS: They're present here. They haven't

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1 been sworn in but -- we could provide statements of
2 qualifications during the hearing as needed.

3 HEARING OFFICER STUBCHAER: All right. And Mr. --
4 before we proceed Mr. Roberts had something.

5 MR. ROBERTS: Mr. Stubchaer, I just wonder would
6 this be the appropriate time to ask a couple of
7 clarifying questions on the stipulation, or is it going
8 to be addressed in the cross-examination? We should
9 examine a witness?

10 HEARING OFFICER STUBCHAER: The reason I'm
11 hesitating -- I would say it ought to go by
12 cross-examination, but it was presented by the attorney
13 and they don't get cross-examined. So let's do it now.

14 ---oOo---

15 CROSS-EXAMINATION OF DEPARTMENT OF WATER RESOURCES

16 BY CALIFORNIA URBAN WATER AGENCIES

17 BY JAMES ROBERTS

18 MR. ROBERTS: James Roberts, Deputy General Counsel
19 with the Metropolitan Water District. Ms. Crothers, you
20 stated that the stipulation does not purport to address
21 any potential impacts with respect to drinking water
22 quality issues?

23 MS. CROTHERS: Yes.

24 MR. ROBERTS: And so I presume that means that the
25 issue of any permit terms and conditions on the project

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1 with respect to drinking water quality issues that's
2 still open?

3 MS. CROTHERS: Yes.

4 MR. ROBERTS: And DWR -- does DWR believe that this
5 stipulate -- this stipulation precludes it from asserting
6 such terms and conditions if it thinks it's appropriate?

7 MS. CROTHERS: No, it does not preclude.

8 MR. ROBERTS: Okay. And I presume that it would
9 not preclude customers of the State Water Project, or any
10 other water user?

11 MS. CROTHERS: That's right. They could pursue
12 other -- you know, requests to the Board for appropriate
13 conditions that they thought were necessary.

14 MR. ROBERTS: Thank you. Those are the only
15 questions I have. Thank you.

16 HEARING OFFICER STUBCHAER: Thank you, Mr. Roberts.
17 Mr. Turner.

18 ----oOo----

19 CROSS-EXAMINATION OF THE DEPARTMENT OF WATER RESOURCES

20 BY THE U.S. DEPARTMENT OF THE INTERIOR

21 BY MR. JIM TURNER

22 MR. TURNER: Thank you, Mr. Stubchaer. I have just
23 one, I hope very simple, question regarding the
24 stipulation. And that is: As you had mentioned the
25 first condition of the stipulation is consistent with

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1 Exhibit A, the stipulation between the Bureau and the
2 Delta Wetlands.

3 I was wondering was Condition 3, which is
4 putting in limitation on discharges was -- is that in any
5 way inconsistent with Exhibit B to the Bureau and DWR's
6 stipulation wherein we had entered into an agreement to
7 have an agreement between Delta Wetlands, DWR, and the
8 Bureau for coordinated operations, or could Condition 3
9 be satisfied through such an operation's agreement?

10 MS. CROTHERS: I don't think they're inconsistent.
11 I think they can be complimentary.

12 MR. TURNER: Thank you. I'd have no further
13 questions.

14 HEARING OFFICER STUBCHAER: Ms. Crothers, do you
15 have copies available?

16 MS. CROTHERS: Yes. That was -- I'd like to at the
17 appropriate time introduce these as DWR Exhibit
18 Number 23. And then at the appropriate time we'd offer
19 them as evidence.

20 MS. LEIDIGH: I think it's appropriate right now to
21 let everybody have copies of them.

22 HEARING OFFICER STUBCHAER: You can identify it
23 now, but they need to have copies of it before we rule on
24 accepting it in evidence. That will be at the conclusion
25 of the --

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1 MS. CROTHERS: Yes.

2 HEARING OFFICER STUBCHAER: -- cross-examination,
3 or recross. And so do you have copies for everyone now?

4 MS. CROTHERS: I have -- since we just officially
5 signed it, we can make additional copies. I have two
6 right now for the Board and staff. And we can go out and
7 get some copies made.

8 HEARING OFFICER STUBCHAER: Could we call someone?

9 MS. LEIDIGH: Staff can get some copies made. I
10 understand Mr. Cornelius has a Xerox machine close by.

11 HEARING OFFICER STUBCHAER: All right. Mr. Maddow.

12 MS. CROTHERS: Excuse me, that did not have a
13 number on it. Does that make a big difference at this
14 point?

15 HEARING OFFICER STUBCHAER: Everyone will have to
16 write their own number on it.

17 Mr. Maddow.

18 MR. MADDOW: I'm not sure I followed all of
19 Ms. Crothers's opening as well as I should have, because
20 someone had apparently handed me an earlier draft of the
21 stipulation before she started to talk and I was trying
22 to juggle two things.

23 But I believe she said she's going to put on
24 some testimony. And I'm not sure whether the testimony
25 you're going to present is going to parallel your written

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1 submission insofar as, for example, water quality issues
2 are concerned. But if you are going to put on that
3 testimony, I was wondering if we might have an
4 opportunity to inquire a little bit about the stipulation
5 once we hear that testimony.

6 I'm not sure that that's going to be necessary.
7 But it does seem to me that hearing what they say about
8 water quality might cast a little different light,
9 conceivably, on the language of this stipulation that
10 we're just starting to digest. And I would just like to
11 see if it would be possible to, perhaps, raise some
12 further questions about the stipulation later.

13 HEARING OFFICER STUBCHAER: If there are questions
14 that need clarification later, yes, I think -- especially
15 since it's kind of a surprise to see this now. Maybe
16 we'll have to do it on another day.

17 MR. MADDOW: I think --

18 HEARING OFFICER STUBCHAER: But I think you're
19 entitled and everybody is entitled to get a written copy
20 of it and study it in detail.

21 MR. MADDOW: Thank you. And I wasn't suggesting
22 that we come back another day. My comment was with
23 regard to their direct. And just at the conclusion of
24 that, perhaps, if Ms. Crothers is the person to whom
25 we're directing those questions we may have a few more.

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1 HEARING OFFICER STUBCHAER: We may be back on
2 another day with this panel anyway.

3 MR. MADDOW: May I ask just one question in regard
4 to the language of the stipulation along the lines of
5 what the other counsel asked?

6 HEARING OFFICER STUBCHAER: Yes.

7 ---oOo---

8 CROSS-EXAMINATION OF THE DEPARTMENT OF WATER RESOURCES

9 BY CONTRA COSTA WATER DISTRICT

10 BY ROBERT MADDOW

11 MR. MADDOW: It concerns Condition 1. You refer to
12 it, as I understand it, as being -- as being the same as
13 a condition in the Contra Costa water rights permits and
14 Decision 1629. I don't think it is. And I just want to
15 make sure I understand -- understand your statement to
16 that affect.

17 Are you suggesting to the Board that this is
18 identical to the decision in the Contra Costa decision?

19 MS. CROTHERS: It's not identical. It's
20 essentially the same. However, there's one modification
21 in the very first sentence that goes to the effect of in
22 the Contra Costa term Condition 5 of D-1629 the first
23 sentence was:

24 No diversion is authorized that would adversely
25 affect the operation of the Federal CVP or SWP permits

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1 and licenses for these projects at the time of this
2 order.

3 MR. MADDOW: In effect on the date of this order?

4 MS. CROTHERS: Yes. And we have modified that
5 sentence to clarify that it's -- it's also -- that it
6 doesn't affect the priority date of our waters rights for
7 the State Water Project. That we are speaking of the
8 water rights for the State Water Project as of the time
9 of this order.

10 And there was some discussion of -- about what
11 that sentence meant. And subsequent hearings for DWR in
12 our water rights Order 95-6, when we had some hearings on
13 that. And we just wanted to clarify that language. The
14 Board wrote some clarification in our water rights order
15 95-6. And we're just picking up on that clarification so
16 it's all in one permit term now. So you don't have to go
17 back to look at 95-6 to see what the clarification on
18 that first sentence is. But we have intended this
19 Condition 1 to be the same -- essentially, the same as
20 the Condition 5 of D-1629.

21 MR. MADDOW: Without embracing her interpretation
22 of what happened in 95-6 I appreciate the answer and
23 recognize that she hasn't taken the oath. So we'll just
24 call that argument.

25 HEARING OFFICER STUBCHAER: Ms. Murray.

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1 MS. MURRAY: Actually, I had a similar point as
2 Mr. Maddow just that if I chose not to ask questions of
3 the stip now, after hearing the testimony I could still
4 ask cross-examine questions on the stip?

5 HEARING OFFICER STUBCHAER: Yes.

6 MS. MURRAY: Is that the agreement?

7 HEARING OFFICER STUBCHAER: Yes. Okay. Are you
8 ready for -- to have your witnesses promise to tell the
9 truth?

10 MS. CROTHERS: Yes. It's -- whoever my witnesses
11 haven't been sworn in, you may like to stand up now.

12 HEARING OFFICER STUBCHAER: Any Department of Water
13 Resources witnesses would have not taken the oath, please
14 stand. Please, raise your right hand. You promise to
15 tell the truth in these proceedings?

16 THE WITNESSES: Yes.

17 HEARING OFFICER STUBCHAER: All right. Be seated.

18 ----oOo----

19 DIRECT TESTIMONY OF THE DEPARTMENT OF WATER RESOURCES

20 BY CATHY CROTHERS

21 MS. CROTHERS: I know call my first witness
22 Mr. Larry Gage. Mr. Gage, please, state your full name
23 and occupation.

24 MR. GAGE: My name is Larry Gage. I'm chief of the
25 Operations Control Office in the Department of Water

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1 Resources --

2 HEARING OFFICER STUBCHAER: Mr. Gage, they can't
3 hear you. So, please, get closer to the mic, or speak up
4 a little louder, or both.

5 MR. GAGE: We'll try again.

6 HEARING OFFICER STUBCHAER: Okay.

7 MR. GAGE: My name is Larry Gage.

8 HEARING OFFICER STUBCHAER: Can you hear that in
9 the back?

10 MS. DIGNAN: I can hear.

11 HEARING OFFICER STUBCHAER: She has a transmitter
12 right up here.

13 MS. DIGNAN: He just cranked up to about a seven.
14 Everybody else is down to about a two.

15 MR. GAGE: I guess I'm soft spoken.

16 HEARING OFFICER STUBCHAER: That's pretty good,
17 Larry.

18 MS. CROTHERS: Mr. Gage, did you prepare your
19 statement of qualifications identified as DWR Exhibit 2?

20 MR. GAGE: Yes, I did.

21 MS. CROTHERS: Please summarize your duties as the
22 Chief of the State Water Projects Operations Control
23 Office.

24 MR. GAGE: The Operations Control Office is
25 responsible for planning, scheduling, and dispatching the

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1 State Water Project operations. This includes
2 coordination with the U.S. Bureau of Reclamation and
3 participation in the CAL/FED Operations Group. And
4 responsibility for operations within the mandates of
5 water rights, biological opinions, and agreements with
6 other agencies.

7 MS. CROTHERS: Mr. Gage, did you prepare your
8 written testimony identified as part one of DWR Exhibit
9 19 entitled "Impact to SWP Operations Consistency with
10 the Water Quality Control Plan and Rediversion of Water
11 to the State Water Project"?

12 MR. GAGE: Yes, I did.

13 MS. CROTHERS: Please, summarize your written
14 testimony.

15 MR. GAGE: There were four issues of concern that I
16 addressed in my written testimony. And they were
17 non-interference with senior water rights, the E/I
18 ratio --

19 HEARING OFFICER STUBCHAER: Please define E/I for
20 the record.

21 MR. GAGE: The export inflow ratio. The Delta
22 Wetlands forecasted operations and consistency with the
23 State Water Project and the USBR and the expected yield
24 of the project. Regarding the senior water rights
25 non-inference of -- I believe the stipulation has pretty

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1 much taken care of that concern.

2 The third issue is the forecasted operations
3 consistency. And this was based on the fact that OCAP
4 that I based my testimony on was a draft prior to what
5 was submitted here finally. And that draft stated they
6 wanted to use 50 percent for median hydrology forecasts
7 to predict their operations -- excuse me, whereas the
8 Bureau and the Department both operate on very
9 conservative hydrology to be sure we can meet our water
10 commitments. That issue is covered in the later draft --
11 the latter, I guess, final version of the OCAP.

12 So that leaves me with yield and E/I ratio.
13 Very quickly on yield, my concern was difference of
14 definition between what Delta Wetlands has used as yield
15 and what the State Water Project and the CDT uses as
16 yield.

17 State Water Project and Central Valley Project
18 use yield as the average delivery that the projects could
19 meet by operating through the 19 to 28 to 34 critical
20 drought. Delta Wetlands has -- excuse me again. Delta
21 Wetlands has some definition of yield, however, the
22 average 70-year delivery. And I just wanted to be sure
23 that people did not confuse these definitions and assume
24 that the 154,000 acre feet of yield from the Delta
25 Wetlands Project would automatically be added to the

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1 critical period yields of the State Water Project and CVP
2 and come up with a reasonable answer. That would not be
3 true.

4 The final issue that I wanted to discuss was the
5 E/I ratio, export inflow. The E/I ratio was established
6 in the Delta Accord. It's included in the Water Quality
7 Control Plan and the Federal biological opinions.
8 There's no mention in those issues -- in those documents
9 of any project facility being included in the
10 calculations except for the State Water Project and the
11 Central Valley Project at Tracy.

12 The Federal biological opinions and the OCAP
13 indicate that Delta Wetlands diversions would be
14 considered as exports. And I believe this could be
15 incorrect, because the water is still physically within
16 the Delta. It has not been exported in my opinion.
17 It's also inconsistent with the definitions in the Water
18 Quality Control Plan in Footnotes 11 and 23 for Table 3.

19 I included two tables in my testimony on
20 hypothetical operations. And I have Table 1 on the
21 screen here to talk quickly about. This is a
22 hypothetical spring operation. It's a time when there's
23 a fair amount of water flowing into the Delta. It would
24 result -- let me define the table a little bit first.

25 The left most column is operation of the State

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1 Water Project and the CVP without the existence of Delta
2 Wetlands. The center column numbers is what the
3 operation would be if you assumed Delta Wetlands's
4 diversions were not counted as exports in the E/I ratio,
5 but correctly deducted from Delta outflow. And the far
6 right-hand column is the operation as it would be with
7 the diversions by Delta Wetlands included as exports.

8 The bottom to the left-hand column you see
9 there's about 18,400 csf in this example as outflow. And
10 that would be sufficient to meet the conditions and have
11 water left over for Delta diversions in this -- for Delta
12 Wetlands's diversions in this example.

13 I assumed in column two that Delta Wetlands
14 would be -- would be told that there was 3,000 csf
15 available, actually, probably a little bit more than
16 3,000 because of all the limitations that cut them down
17 from being able to take a hundred percent of what's
18 available. But assuming all that they could take 3,000
19 csf. The exports at Clifton Court and Tracy would remain
20 the same. And Delta outflow would go down by 3,000 csf
21 if Delta Wetlands had diverted. And the E/I ratio will
22 stay the same, 34 percent.

23 In this -- I chose examples that were very close
24 to the limiting E/I ratios, because those are the only
25 times they're under submission. Probably 90 percent of

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1 the time it's either obviously okay, or not okay.

2 In the far right-hand column it's the diversions
3 by Delta Wetlands being considered as exports. What the
4 problem you run into immediately is the E/I ratio of 35
5 percent, which is controlling in the springtime. And so
6 you need to look under this example of adding how much
7 Delta Wetlands's diversion could you add to Clifton Court
8 for the State Water Project and CVP exports and still be
9 within the 35-percent ratio?

10 And my example here shows that of the 3,000 csf
11 that would, otherwise, have been available for diversion
12 as excess they would be limited to taking only 400 csf
13 which, of course, would mean that the Delta outflow would
14 be that much higher. The Delta Wetlands would be
15 precluded from taking that water.

16 Would you put up Table 2 in there. The second
17 example is a hypothetical fall operation. The same set
18 up in the columns, the left one is without the Delta
19 Wetlands; the center one is the way I think Delta
20 Wetlands releases should -- or discharges should probably
21 be handled. And the far right-hand one is the definition
22 is used in the OCAP and the biological opinion as I
23 believe -- no, I guess, it's in the E/I ratio
24 calculations, which is a real problem issue.

25 In this example the exports without the project

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1 would be -- would be 54-percent E/I ratio. And if Delta
2 Wetlands was called on to release 3,000 csf for export
3 for whoever they might end up contracting with, that
4 would result in an increase of 3,000 at Clifton Court for
5 the State Water Project. And outflow stays just the
6 same, 4400 csf in this hypothetical example with or
7 without.

8 In the far right-hand column, -- let's see, did
9 I say that right? Yeah, that's right. The far
10 right-hand column is where Delta Wetlands operation,
11 their releases are not considered as inflow to the Delta.
12 And if they're not considered as inflow, then, of course,
13 they have the relationship on what the exports are
14 allowed.

15 If the water is not going to be allowed to be
16 exported -- to be exported, then it follows that there
17 will be little reason for Delta Wetlands to release it.
18 So in this example I ended up showing that they would
19 only be able to release half of the water, 1500 csf
20 before we ran into the 6500 -- the 65-percent of the E/I
21 ratio problem.

22 And my primary concern, I guess, is the lack of
23 considering releases from Delta Wetlands as inflow to the
24 Delta. This process would preclude any acquisition of
25 water during the drought, such as in 1991 when there were

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1 several 100,000 acre feet of water acquired from within
2 the Delta. Whether or not that would happen again or
3 whatever, there is no way to utilize that kind of water
4 supply under the current -- under this proposed viewing
5 of whether or not water released into the channels is
6 inflow.

7 That concludes my summary.

8 MS. CROTHERS: Thank you, Mr. Gage.

9 I'd like to call the second DWR witness,
10 Mr. Raymond Tom. Mr. Tom, please state your name -- your
11 full name and occupation.

12 MR. TOM: My name is Raymond Tom. And I am
13 currently the acting Chief of the Technical Services
14 Section in the Water Quality Assessment Branch of DWR.

15 MS. CROTHERS: Mr. Tom, did you prepare your
16 statement of qualifications identified as DWR Exhibit
17 Number 3?

18 MR. TOM: Yes.

19 MS. CROTHERS: Would you, please, summarize your
20 duties at DWR.

21 MR. TOM: As acting chief I manage four units
22 within the Department: The municipal water quality
23 investigations program, also known as the MWQI Program;
24 the Site Assessment Program; Quality Assurance/Quality
25 Control Program; and a field unit which conducts solid

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1 sampling for our programs. The MWQI Program has been
2 studying the drinking water quality of the Delta since
3 1982. And I've been working with this program since
4 December of 1994.

5 MS. CROTHERS: Mr. Tom, did you prepare your
6 written testimony identified as part two of DWR Exhibit
7 19, entitled "DW Project and Drinking Water Concerns"?

8 MR. TOM: Yes, along with the staff of the MWQI
9 Program.

10 HEARING OFFICER STUBCHAER: I'm sorry, I couldn't
11 hear the last part. Along with the what?

12 MR. TOM: Along with the staff of the MWQI Program.

13 MS. CROTHERS: Mr. Tom, please summarize your
14 written testimony.

15 MR. TOM: Much of what I'll be presenting has
16 already been discussed or brought up during this hearing,
17 but the focus of our testimony relates more to the
18 uncertainties of the data assumptions used in Delta
19 Wetlands's assessment of water quality impacts. These
20 uncertainties need to be considered and incorporated into
21 the assessment before adequate mitigation measures can be
22 determined or implemented.

23 From our review of the Draft EIR/EIS we
24 identified four major deficiencies. The first major
25 deficiency is that the model results are not reliable in

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1 predicting trihalomethane concentrations.

2 HEARING OFFICER STUBCHAER: Please, identified the
3 exhibit on the screen.

4 MR. TOM: This is DWR Exhibit 28. Number one,
5 Delta Wetlands used an EPA National Model that
6 underpredicted trihalomethane concentrations, because the
7 model did not account for high bromide concentrations
8 commonly found in the Delta waters. A revised model has
9 been developed to correct the bromide. And this model
10 should have been used in the Draft EIR/EIS.

11 Number two, Delta Wetlands assumed that
12 measurement errors and modeling uncertainties were about
13 ten percent of the measured or modeled values. Yet,
14 neither data, nor statistics to support this ten-percent
15 level of uncertainty is included in the EIR/EIS. From
16 our work in the MWQI Program we frequently see site
17 specific variations of greater than ten percent in
18 measured concentrations of total organic carbon and
19 trihalomethane formation potential.

20 Figure 1 of DWR 19, that's what's on the screen,
21 was taken straight out of the EIR/EIS and was modified to
22 include these error bars. This figure was Figure C5-6 in
23 the Draft EIR/EIS. This figure compares the measured
24 results with the modeled results for trihalomethane
25 concentrations at the Penitencia water treatment plant.

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1 Measured results are on the curve, which serves
2 as the top of the shaded area. And modeled results are
3 on the line curve with the error bars pretty much
4 indicating the plus or minus ten-percent range for each
5 model value. To show how poorly the model results
6 compared to measured results, we see the that difference
7 between the modeled and measured values exceed ten
8 percent most of the time. Thus, our conclusion is that
9 the modeled results are not reliable for predicting
10 trihalomethane concentrations.

11 HEARING OFFICER STUBCHAER: Excuse me, while that
12 was still up there: Was there some start up problem?
13 Because after the first few months it seem to converge
14 more closely to the predicted. I mean --

15 MR. TOM: You talking about this area right here
16 versus here?

17 HEARING OFFICER STUBCHAER: Yes.

18 MR. TOM: That's something you'll have to ask the
19 Delta Wetlands consultant.

20 HEARING OFFICER STUBCHAER: Okay. I should have
21 asked them. Okay.

22 MR. TOM: Anyway, lastly back to DWR 20A, we point
23 out that the modeling errors are compounded in each
24 successive step of the impact analysis when we use such
25 highly variable and questionable input data.

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1 This is DWR Exhibit 20B. The second major
2 deficiency is that the impact analysis was incomplete.
3 This incompleteness was a result of three things. One,
4 Delta Wetlands did not compare their modeled results to
5 proposed lower trihalomethane standards.

6 This is Figure 2 of DWR 19, which was taken
7 straight out of the Draft EIR/EIS and was modified to
8 indicate the current and proposed trihalomethane
9 standards. This figure was Figure C5-15 in the Draft
10 EIR/EIS. The current maximum contaminate level for
11 trihalomethane is a hundred micrograms per liter.
12 Trihalomethane standards will be reduced to 80 micrograms
13 per liter in 1998 for Stage I. And possibly to 40
14 micrograms per liter for year 2002 for Stage II.

15 Figure 2 shows the modeled monthly
16 trihalomethane concentration at the Penitencia water
17 treatment plant during the years 1967 to 1991. The two
18 curves you want to look at are the thin line curve, which
19 showed the monthly peaks in trihalomethane
20 concentrations; and the dark line curve which shows the
21 12-month alluding average for trihalomethane
22 concentrations.

23 Looking at the monthly peaks we see that the
24 concentrations frequently exceed the proposed lower
25 standard especially the Stage II standard. Although it

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1 doesn't look like the Stage I standard is exceeded all
2 that frequently, we need to keep in mind that these
3 values are most likely underpredicted values because of
4 the EPA National Model which was used.

5 Also note that the only times when we see that
6 neither Stage I or II limits are exceeded are at the
7 troughs of the curve, times when there are no discharges
8 from the Delta Wetlands Project.

9 Delta Wetlands also underestimated the
10 significance of impacts on water quality during the two
11 to three months of peak discharge by averaging the
12 increases in trihalomethane concentrations over a
13 12-month period. In other words, using annual averages.

14 To illustrate the effect this averaging has on
15 the interpretation of the data we can look at the dark
16 line curve for the 12-month moving average in Figure 2.
17 This is Figure 2. As we can see this averaging affect
18 tends to flatten out the peaks and the troughs of the
19 monthly curve, thus giving the appearance of less impact
20 on water quality.

21 And lastly under C -- and this has been
22 discussed, we also point out that the analytical results
23 for trihalomethane formation potential in the Wetlands's
24 vegetation and decay experiments were underestimated
25 because the analytical method used. Delta Wetlands

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1 should revise their impact analysis of the Wetlands
2 experiments using corrected THMFP concentrations.

3 The third deficiency is that the Delta Wetlands
4 shallow pond experiments do not fully simulate the water
5 quality impacts of the projects fully flooded island and
6 water storage operation and the reasons are as follows:

7 One, a wetland and fully flooded island may
8 increase not only organic carbon and THMFP concentrations
9 in the Delta, but also nutrient loads, alga growth, taste
10 and odor problems, and bacteria levels. In addition,
11 algae, bacteria, and plants will become the dominate
12 sources of carbon in the reservoirs. On top of this,
13 more organic carbons will be contributed by the peat
14 soils. But regardless of the source of the organic
15 carbon, trihalomethane formation is directly related to
16 the total concentration of organic carbon.

17 In the Delta Wetlands shallow pond experiment
18 the water used for flooding had an initial total organic
19 carbon concentration of four milligrams per liter.
20 However, after only three to four months the
21 concentrations rose to 30 to 40 milligrams per liter.
22 And what we really don't know is if concentrations in a
23 fully flooded island will also be in the range of 30 to
24 40 milligrams per liter, or significantly less because of
25 dilution.

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1 And, lastly, down at the bottom there, to gain a
2 better understanding of the impacts of flooded peat soil
3 islands two studies are currently being designed in the
4 MWQI Program to determine the factors which will affect
5 the amount of carbons released from shallow and deep
6 flooded islands. One study will study organic carbon in
7 a constructed wetland. And the other study will examine
8 organic carbon in deeper flood situations.

9 Our last point is that the Delta Wetlands
10 analysis failed to show that total organic carbon from a
11 wetland and water storage operation had less than
12 significant impacts on drinking water treatment.
13 Information in the Draft EIR/EIS show that total organic
14 carbon, whether from farm peat soil, wetland habitat
15 soil, or decaying plants readily formed the same amount
16 of trihalomethanes per unit concentration from dissolved
17 organic carbon.

18 In this case, organic carbon is organic carbon.
19 And there would be no difference in the organic carbon
20 released from their project, or from agricultural soils
21 since release from both would produce the same amount of
22 trihalomethanes.

23 So in summary, we can't agree with Delta
24 Wetlands conclusion that the project will not have any
25 significant detrimental impacts on water quality --

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1 MS. LEIDIGH: Could you identify this?

2 MR. TOM: I'm sorry.

3 HEARING OFFICER STUBCHAER: He hasn't referred to
4 the overheads.

5 MR. TOM: We can back up.

6 MS. LEIDIGH: You've got a good point.

7 MR. TOM: This is DWR Exhibit 20D. I'll start this
8 sentence over again. In summary, we can't agree with
9 Delta Wetlands conclusion that the project will not have
10 any significant detrimental impacts on water quality, or
11 on water treatment facilities in any current and use
12 stream Federal drinking water standards for total organic
13 carbon, trihalomethanes, or other disinfection
14 by-products.

15 MS. CROTHERS: Thank you, Mr. Tom. Does this
16 complete the summary of your testimony?

17 MR. TOM: Yes.

18 MS. CROTHERS: I would like to call our third
19 witness Mr. Stephen Ford.

20 Mr. Ford, did you prepare your statement of
21 qualifications identified as DWR Exhibit Number 4?

22 MR. FORD: Yes, I did.

23 MS. CROTHERS: Please, summarize your duties at
24 DWR.

25 MR. FORD: I'm Chief of the Environmental Studies

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1 Branch for the Department's Environmental Services
2 Office. As branch chief I'm responsible for supervising
3 DWR activities involving assessments of the impacts of
4 water project operations and other factors on Bay-Delta
5 fishery resources. Also on the development of fish
6 screens to reduce adverse impacts of water diversions,
7 the identification and implementation of mitigation
8 measures to offset unavoidable impacts on the State Water
9 Project operations.

10 MS. CROTHERS: Mr. Ford, did you prepare your
11 written testimony identified as part three of DWR
12 Exhibit 19 entitled "Fishery Issues Relating to the Delta
13 Wetlands Project"?

14 MR. FORD: Yes, I did, with the assistance of my
15 staff.

16 MS. CROTHERS: Please, summarize your written
17 testimony.

18 MR. FORD: My testimony focuses on identifying
19 areas on which the Delta Wetlands Project is most likely
20 to affect the Department's environmental activities and
21 interests. Among other things my testimony points out
22 the need to coordinate Delta Wetlands proposed bond
23 agreement with other monitoring in the Delta.

24 It points out the need to clarify the basis for
25 the use of the fall midwater trawl index in determining

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1 project operations. And, lastly, it points out the
2 potential for Delta Wetlands operation to impact Delta
3 fish and, thereby, in doing so also affect project
4 operations.

5 With regard to monitoring, we are encouraged to
6 see the statements in the Fish and Wildlife Services
7 biological opinion and in Delta Wetlands Draft Operation
8 Criterion Plan indicating that the -- to the extent
9 possible Delta Wetlands will use existing monitoring
10 sites, programs, and methods to maintain consistency with
11 other Bay-Delta Delta monitoring programs.

12 We feel this is appropriate and should be
13 encouraged by the Board. However, it also appears that
14 Delta Wetlands may need to supplement existing monitoring
15 programs such as the interagency ecological program's
16 realtime monitoring program to meet Delta Wetlands
17 specific needs. Delta Wetlands may need to add sites,
18 use different sampling gear, or extend the duration of
19 monitoring beyond that available through existing
20 programs.

21 If additional sampling is necessary we believe
22 that the Board should encourage that it also be
23 coordinated with existing programs, in particular, with
24 those of the interagency ecological program. We also
25 believe that the Delta Wetlands should pay for any

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1 additional monitoring that it might need in its
2 operations.

3 With regard to the Delta smelt midwater trawl
4 index, we don't understand the biological justification
5 for using the index as a basis for operating the projects
6 through the following year. A stock recruitment
7 relationship has never been found for Delta smolt. So
8 the fall midwater trawl index is a poor indicator, or
9 predictor of smelt abundance the following year.

10 It might be more appropriate to use realtime
11 estimates of Delta smelt abundance such as the spring
12 20 millimeter survey for larvae; the summer to net survey
13 for juveniles, and use of the fall midwater trawl only
14 for adults.

15 With regard to the Delta Wetlands affecting
16 State Water Project operations, we know that the Delta
17 Wetlands Project received a non-jeopardy opinions from
18 the Federal and State fishery agencies. However, the
19 Board should recognize that the Delta Wetlands's
20 operations could still adversely affect State Water
21 Project operations in two ways.

22 First, it could delay the recovery of threatened
23 and endangered fish and thereby leave State Water Project
24 operations constrained by ESA requirements longer than
25 might otherwise be the case. Delta Wetlands Project

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1 could also increase the number of fish salvaged at the
2 State Water Project facilities. Although Jones and
3 Stokes's analyses indicated that this increase might be
4 relatively small, it could trigger more frequent
5 reconsultations between DWR, Bureau of Reclamation, and
6 State and Federal fishery agencies when it pushes us to
7 the salvage levels indicated in the biological opinions.
8 Under such reconsultations we have frequently modified
9 our -- our project operation to reduce the take of
10 threatened and endangered species. That concludes my
11 statements.

12 MS. CROTHERS: Thank you, Mr. Ford. My last
13 witness is Mr. Raphael Torres.

14 Please, state your full name and occupation.

15 MR. TORRES: My name is Raphael Torres. I'm Chief
16 of the Civil Engineering Branch for the Department of
17 Water Resources. I'm a registered civil and geotechnical
18 engineer.

19 MS. CROTHERS: Mr. Torres, did you prepare your
20 statement of qualifications identified as DWR Exhibit 6?

21 MR. TORRES: Yes.

22 MS. CROTHERS: Please, summarize your duties at
23 DWR.

24 MR. TORRES: I'm responsible for the design and
25 construction of a variety of facilities primarily

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1 associated with the State Water Project. These include
2 earth structures, such as earth embankments. I have
3 supervised the Department's engineering laboratories for
4 a number of years where we have conducted a number
5 extensive tests.

6 I've conducted a stability and seepage analyses
7 for earth dams, canal embankments, and levees. I've
8 reviewed other levee design studies. I've conducted
9 field investigations. I've also been involved in the
10 canal and levee emergency repairs. I'm presently on the
11 Delta levee -- the CAL/FED Delta Levee Technical Team and
12 the sub-group leader for seismic risk evaluation of Delta
13 levees.

14 MS. CROTHERS: Mr. Torres, did you prepare your
15 written testimony identified as part four of Exhibit DWR
16 Exhibit 19 entitled " Impact Levees and State Water
17 Project Operations"?

18 MR. TORRES: Yes.

19 MS. CROTHERS: Please, summarize your written
20 testimony.

21 MR. TORRES: In summary my testimony is going to
22 address four areas. These include levee stability, the
23 seepage control system, impacts on communication links to
24 coordinate with State Water Project operations, and the
25 design of pumping stations for Webb Tract and Bacon

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1 Island.

2 The levees on the Delta Wetlands Project are
3 typical of levees in that they're originally constructed
4 usually with very little engineering and sometimes
5 they're built on very weak organic foundations. All of
6 the improvements proposed in the project would probably
7 increase the land site stability. Continual maintenance
8 I think would be required to maintain the same increased
9 level of stability.

10 The level of maintenance probably would be much
11 greater than what is required for engineered embankments
12 such as the Clifton Court Forebay embankment. The
13 addition of berm levees at other locations in the Delta
14 has often resulted in increases in the factor of safety
15 of around 5 to 15 percent. Even after the improvement
16 the stability of a levee would probably still be less
17 than an engineered embankment. Also, as mention in the
18 Delta Wetlands EIR/EIS the water site stability decreases
19 with the filling of the island.

20 Inundation of the islands would also make it
21 more difficult to respond to levee emergencies with
22 construction equipment and materials. Also, inspection
23 of potential levee stability problems could be more
24 difficult with inundated islands.

25 It is my understanding that the Delta Wetlands

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1 is proposing to utilize a relief flow system to maintain
2 groundwater levels to the pre-reservoir conditions. It's
3 also my understanding that the relief flow system
4 consists of a series of wells located through the levee
5 in the foundation.

6 Seepage water would be pumped from these wells
7 and discharged into the reservoir. Although we have no
8 specific information on the details of the relief well
9 system, it's our belief that it could be a very difficult
10 system to operate effectively. The number of wells
11 necessary to achieve the lowering of the water level
12 could be large.

13 Since the wells would be fed by both the channel
14 and reservoir, the length of time the pumps need to run
15 would be very long if not continuous. Consequently, the
16 cost of such a system could be significant. And, again,
17 without having additional information we question the
18 feasibility of such a system at this time.

19 Next area are impacts to communication links.
20 The Delta Wetlands Project operations require
21 coordination of the State Water Project and others. This
22 could require communication links. Depending on the type
23 of communication methods chosen there might be a need for
24 extra telephone lines or microwave towers.

25 The last area that I'd like to address are the

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1 design of the pumping stations for Webb Tract and Bacon
2 Island. The pumping stations for Webb Track and Bacon
3 Island can be engineered. However, there are details in
4 the conceptual design shown which may be extremely
5 difficult to accomplish. These are as follows:

6 There are three of these. The variation in
7 suction head and thus total pumping head may cost
8 significance changes in flow. Obtaining the pump that
9 will operate effectively under these conditions may be
10 difficult. The floating platforms connected to a
11 flexible discharge line would most likely have
12 significant operations and maintenance problems. The
13 fail of variation in platform elevation, construction of
14 safe and secure electrical connections could be
15 difficult. The flexible discharge line which would be
16 subject to fatigue and wear and the materials selected
17 for the line could be critical.

18 There are specific requirements for inlet design
19 for vertical turbine type pumps. This would also be a
20 critical consideration in the design of the platform
21 structure. That's it.

22 MS. CROTHERS: Thank you. That concludes our
23 direct testimony. We have available our witnesses here
24 and others in the audience for cross-examination.

25 HEARING OFFICER STUBCHAER: All right.

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1 Ms. Forster.

2 ----oOo----

3 CROSS-EXAMINATION OF THE DEPARTMENT OF WATER RESOURCES

4 BY BOARD MEMBERS

5 BOARD MEMBER FORSTER: I have a question before you
6 start with the other parties. On your stipulation on the
7 back on page two can you just briefly under number three
8 re-run the sentence "to be modified to meet any
9 applicable Federal or State law or mandate." Rundown a
10 list of what you're talking about.

11 MS. CROTHERS: Well, we -- we would have to -- for
12 operation purposes when we operate we also operate in
13 order to comply with what you're most familiar with, the
14 Water Quality Control Plan. Under -- under your -- your
15 mandates -- under the Endangered Species Acts
16 requirements both Federal and State Endangered Species
17 Act. We operate our projects to comply with our
18 biological opinions.

19 We have -- Clifton Court Forebay operates under
20 the Army Corp of Engineer permit when we were permitted
21 to operate and we have limits on water that's diverted
22 into Clifton Court Forebay. Based on that would be Army
23 Corp permit. I'm sure there's numerous others that are
24 not coming to my mind, but those are Federal, State laws
25 and regulations that are generally what we comply with

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1 our permits that we've obtained for operation of the
2 project.

3 BOARD MEMBER FORSTER: I just -- maybe they're in
4 an exhibit. Do we list all of the laws that are
5 applicable to these issues?

6 MS. LEIDIGH: I'm not aware that anybody has sat
7 down and made a specific list. I think that we can
8 easily think about what DWR might be subject to. But
9 it's the laws that DWR are subject to that are relevant
10 here.

11 BOARD MEMBER FORSTER: Okay. Thanks.

12 HEARING OFFICER STUBCHAER: Mr. Brown.

13 BOARD MEMBER BROWN: Ms. Crothers, maybe Mr. Gage.
14 The State has got two projects they've studied for
15 several years downstream, Kern County groundwater bank
16 and Los Banos Grande. There is a report out on both of
17 those. I think Kern County Bank was developed maybe a
18 hundred thousand acre feet annually at a cost of \$120 an
19 acre foot. Los Banos Grande another eight- or
20 nine-year-old report would yield 3 to 400,000 acre feet
21 at a cost of \$203 an acre foot.

22 A couple questions. What's the status of those
23 two projects? And would the Delta Wetlands have an
24 effect that's been studied where either of these projects
25 were concerned? So it's two questions

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1 HEARING OFFICER STUBCHAER: Did you take the oath?

2 MR. HUNTLEY: I'm Ed Huntley, Department of Water
3 Resources Board, Chief of Operation and Maintenance.

4 Mr. Brown, the questions related to status,
5 current status of Kern water bank and Los Banos Grande?

6 BOARD MEMBER BROWN: Yes.

7 MR. HUNTLEY: I didn't quite catch the end of it.
8 Let's start with that. Kern water bank, of course, we
9 have given away as part of the Monterey agreement. That
10 now belongs to the Kern County Water Agency.

11 BOARD MEMBER BROWN: Is it in full effect, or --

12 MR. HUNTLEY: No, it's not in full operation. It's
13 in, I guess you'd call it partial operation. Kern water
14 bank, in total, was -- was a concept that involved the
15 whole area down there. There were specific elements of
16 it. There was a Kern -- Kern fan element, is what we
17 actually gave back to Kern County in the Monterey
18 agreement. And it's partially operational, although, it
19 never got all the facilities it needed to operate.

20 BOARD MEMBER BROWN: It had a potential of about
21 100,000 acre feet annually, didn't it?

22 MR. HUNTLEY: It was in that neighborhood. Los
23 Banos Grande is on the back burner, the far back burner
24 currently. There's no -- only continuing studies going
25 on at some alternative sites down there, so if we ever

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1 got back into the mode of pursuing that more seriously
2 we'd be prepared to meet some of the CEQA/NEPA
3 requirements. It, of course, was fairly costly.

4 Our contractors did not feel that it was
5 appropriate to pursue it at this time particularly
6 without a Delta solution. It's -- it looks much more
7 feasible if you can get the water out of the Delta.

8 BOARD MEMBER BROWN: There's about another \$200 to
9 do that, wasn't it?

10 MR. HUNTLEY: Yeah. It was actually was over \$200.
11 I think it was pushing \$300 an acre foot. And we haven't
12 finished the planning on it either and didn't know what
13 all the restrictions were going to end up being.

14 BOARD MEMBER BROWN: I guess the bottom line is
15 this is not really a competing project with anything that
16 the Department has?

17 MR. HUNTLEY: No, not currently.

18 BOARD MEMBER BROWN: Okay. Thanks, Ed.

19 HEARING OFFICER STUBCHAER: Okay. Could I have a
20 show of hands of those agencies that wish to
21 cross-examine. One, two, three, four. Okay.
22 Ms. Schneider.

23 Ms. Schneider, how long do you think your
24 cross-examination will require?

25 MS. SCHNEIDER: Actually, Mr. Stubchaer, we went

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1 into pretty great detail in cross-examination yesterday.
2 And we will further address in rebuttal testimony the
3 mentioned by Mr. Tom and Mr. Ford and Mr. Torres today.

4 And we appreciate Mr. Gage's testimony today
5 and, actually, want to thank him for helping us achieve
6 the agreement on the stipulation. He was very helpful to
7 bring me practical operations view point into those
8 discussions. So I guess that we would defer and present
9 additional rebuttal to you when the time comes.

10 HEARING OFFICER STUBCHAER: All right. Well,
11 that's fine. Let's see, Mr. Schulz.

12 ----oOo----

13 CROSS-EXAMINATION OF THE DEPARTMENT OF WATER RESOURCES

14 BY THE STATE WATER CONTRACTORS

15 BY CLIFF SCHULZ

16 MR. SCHULZ: I have a few questions for Mr. Gage
17 and one or two for Mr. Torres. Let me start with
18 Mr. Torres.

19 You were talking about the levees on the Delta
20 Wetlands islands. And I have heard indications
21 throughout this hearing that because they are
22 constructing the reservoirs to an elevation of I believe
23 it's plus six, that this would implicate not levee issues
24 but possibly the position of Division of Dam Safety. Can
25 you comment on that?

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1 MR. TORRES: It's difficult for me to comment on
2 issues of dam safety. Dam safety regulates the same
3 water front. And they regulate me as much as they do
4 everyone else. The process that you would probably
5 follow is Delta Wetlands would submit their proposal to
6 Safety of Dams -- Division of Safety of Dams and the
7 Division of Safety of Dams would make that determination.

8 MR. SCHULZ: As to whether they have jurisdiction
9 over this these particular levees?

10 MR. TORRES: That's right.

11 MR. SCHULZ: Does any other member of panel of DWR
12 have a comment, or any other information that would be
13 helpful on this plus-six elevation?

14 MR. RUSSELL: I'm Dwight Russell with the
15 Department of Water Resources. And we have looked into
16 it and we have comments in our -- if you will, the
17 comments that we gave to the Delta Wetlands with respect
18 to their Draft EIR. And we did mention that there is a
19 high likelihood that if they go to plus six that they
20 will have to go through the Division of Dam Safety and
21 secure the necessary permits and arrange the necessary
22 requirements and submit their plans.

23 MR. SCHULZ: If that is the case -- and again I
24 don't know if anybody on the panel has the expertise to
25 comment on this, but what does that do to the nature of

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1 the work that would have to be done and the cost?

2 MR. TORRES: In general, it's my opinion that the
3 requirements of the Division of Safety of Dams would be
4 greater than the standards to which -- to which that
5 project is being built currently, or being proposed.

6 HEARING OFFICER STUBCHAER: Please, speak up.

7 MR. TORRES: I'm sorry. It's my opinion that the
8 requirements of Division of Safety of Dams that it would
9 probably be greater than what's being proposed now as a
10 design criteria.

11 MR. SCHULZ: And, therefore, the cost would be
12 greater?

13 MR. TORRES: Yes.

14 MR. SCHULZ: Is that to the best of anybody's
15 knowledge addressed in any of the documents that Delta
16 Wetlands has produced with respect to this project.

17 MR. TORRES: I'm not aware of that.

18 MR. SCHULZ: Mr. Gage, were you here when I was
19 asking some questions of Lowell Ploss of the Bureau of
20 Reclamation?

21 MR. GAGE: Yes, I was.

22 MR. SCHULZ: Okay. Would you agree with
23 Mr. Ploss's opinion that it is unlikely that the Bureau
24 of Reclamation through Tracy and the DMC would have
25 wheeling capacity for the Delta Wetlands Project?

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1 MR. GAGE: I would agree with that except possibly
2 in extremely critical years when both projects might be
3 out of water supply.

4 MR. SCHULZ: And those are the kinds of years when
5 Delta Wetlands also seems to not have the water?

6 MR. GAGE: That would depend on the operating
7 criteria. In many cases they would. I think if you
8 looked at their historical, or simulated operations they
9 released the water like in '76 and had nothing left to
10 release in '77, I believe.

11 MR. SCHULZ: So in other words, they have to change
12 the operation scenario that they presented in this
13 hearings in order for that not to be the case?

14 MR. GAGE: I'm not sure. I -- I think the final
15 operation within all the other constraints that are
16 described would be -- would be somewhat contingent upon
17 the needs of whoever they ultimately contracted with for
18 the water. If they contracted with some -- with an
19 agency that preferred to have water carried over from one
20 year to the next to assure some reliability that way,
21 that would be -- that would be a change in -- in
22 operation from what they studied.

23 MR. SCHULZ: So are you saying the final operation
24 scenario is very likely to be dependent upon the identity
25 of the buyer?

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1 MR. GAGE: I believe that's true.

2 MR. SCHULZ: Mr. Ploss also described the fact that
3 the Bureau has received what are called Warren Act
4 contracts which allow third parties to --

5 HEARING OFFICER STUBCHAER: Mr. Schulz, could you
6 raise the mic, please?

7 MR. SCHULZ: I'm sorry.

8 MR. CORNELIUS: I don't think he can raise it.

9 MR. SCHULZ: It's late in the day. And I just want
10 to go home.

11 HEARING OFFICER STUBCHAER: Or just get shorter.

12 MR. SCHULZ: Does the Department, or State Water
13 Project have a similar process for determining whether or
14 not there is wheeling capacity available and for entering
15 into wheeling contracts?

16 MR. GAGE: We have priorities for wheeling
17 established under the Monterey contract on contracts with
18 State Water Contractors.

19 MR. SCHULZ: Would you describe -- and I don't care
20 if it's a general order, again, as I did with Mr. Ploss;
21 in asking this question I would ask you to presume for
22 the purposes of this question that the State Water
23 Project is not the buyer.

24 In that context would you describe, if you
25 would, what are the priorities for the use of aqueduct

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1 capacity? And I don't care if they're in the exact
2 order, but anything that would be above a third-party
3 wheeling arrangement.

4 MR. GAGE: The first and foremost the operations
5 for delivery of project water to the State Water Project
6 contractors. And I believe priority wise that would also
7 include water transfers, purchased water for an
8 individual contractor.

9 MR. SCHULZ: What about the interruptible supply?

10 MR. GAGE: Interruptible supply is, by definition
11 it is the project water. It is simply -- the only
12 difference is that it's not guaranteed to -- or expected
13 to be available more than a period of a few days.

14 MR. SCHULZ: So when you were using the term
15 project water you were talking not only about Table A
16 entitlement delivery but also interruptible delivery
17 under Monterey.

18 MR. GAGE: That's correct.

19 MR. SCHULZ: Go ahead and proceed.

20 MR. GAGE: Following the operation for the project,
21 the project for long-term contractors would come
22 commitments that we may have to wheel water for the
23 Bureau of Reclamation such as Cross Valley Canal, or
24 under --

25 THE COURT REPORTER: I'm having a tough time

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1 hearing you.

2 MR. GAGE: I'm sorry. Wheeling for the Bureau of
3 Reclamation to the Cross Valley Canal, or for joint point
4 diversion operations.

5 MR. SCHULZ: Okay, let's talk about that. The
6 joint point that is not something that presently exists;
7 is that correct?

8 MR. GAGE: It exists only to the extent that it can
9 be done without additional export volumes. And it's done
10 for the benefit of the fishery.

11 MR. SCHULZ: Under State Board Order 95-6, I
12 believe.

13 MR. GAGE: I believe that's correct.

14 MR. SCHULZ: Okay. But the Department has a
15 petition -- the Department and Bureau have a petition
16 pending before the Board for a boarder joint point
17 authority?

18 MR. GAGE: Yes, we do.

19 MR. SCHULZ: Okay. so what you're saying if that
20 was granted then that would also have a priority over
21 third party --

22 MR. GAGE: I believe it would, yes.

23 MR. SCHULZ: It would. Okay. Thank you. Has the
24 Department entered into any long-term wheeling
25 arrangements of the type that would be required for the

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1 Delta Wetlands Project?

2 MR. GAGE: Not that I'm aware of.

3 MR. SCHULZ: And no such agreement at this time
4 exists with Delta Wetlands; is that correct?

5 MR. GAGE: That's correct.

6 MR. SCHULZ: And are negotiations in progress with
7 respect to such a project?

8 MR. GAGE: Not that I'm aware of.

9 MR. SCHULZ: Okay. In your opinion as operator of
10 the project, could such a contract guarantee them a
11 certain amount of capacity on a year-in year-end basis?

12 MR. GAGE: No, it could not. The project does
13 not -- excuse me, I have this frog in my throat today.
14 The project does not guarantee wheeling for any users of
15 water other than the project. The project always has
16 first priority. When there's transferred water or
17 something that's always done on a space available basis.

18 MR. SCHULZ: And could you just as a final question
19 comment on what effect the adaptive management program of
20 the Accord standards and the no-name group, and the make
21 up water what has that done to the Department's
22 flexibility in terms of having such transferring wheeling
23 windows?

24 MR. GAGE: It's limited considerably I believe.
25 Springtime curtailments in operation for benefits of the

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1 fishery create potential water supply impacts which under
2 the hospices of the Accord are suppose to have been made
3 up. That, in essence, moves springtime pumping to in the
4 fall. And because of that there is less space left to
5 wheel water during the times of the year when a lot of
6 users, I believe, would call for that water.

7 MR. SCHULZ: Thank you. That's all I have.

8 HEARING OFFICER STUBCHAER: Okay. Let's see who
9 else wants to cross-examine. Mr. Moss and Ms. Murray.
10 In the interest of -- and Mr. Maddow. Well, all right,
11 that does it. We'll go tomorrow. We'll -- I was
12 wondering if we could finish tonight, but I don't think
13 we could. Are you going to have redirect?

14 MS. CROTHERS: I don't think so.

15 HEARING OFFICER STUBCHAER: All right. Well, how
16 much -- can we have stipulation on the time for
17 cross-examination to see if we can finish today.
18 Mr. Moss.

19 MR. MOSS: 10, 15 minutes.

20 HEARING OFFICER STUBCHAER: Okay.

21 BOARD MEMBER FORSTER: She's five, he's five.

22 HEARING OFFICER STUBCHAER: The panel is going to
23 have to be here tomorrow. So, we will reconvene tomorrow
24 at 9:00 a.m.. We're in recess.

25 (The proceedings concluded at 4:47 p.m.)

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